

**MEGAPESCA Lda**

**CONTRAT CADRE FISH/2006/20**  
**SPECIFIC CONVENTION N°32 MOZAMBIQUE**  
**EX-POST EVALUATION OF THE CURRENT**  
**PROTOCOL TO THE FISHERIES PARTNERSHIP**  
**AGREEMENT BETWEEN THE EUROPEAN UNION**  
**AND MOZAMBIQUE AND ANALYSIS OF THE IMPACT**  
**OF THE FUTURE PROTOCOL ON SUSTAINABILITY,**  
**INCLUDING EX-ANTE EVALUATION**

**Final Report**  
**June 2011**

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### Average exchange rates used

Year	Euro	Mozambique metical	US\$
2007	1	35,219	1,365425
2008	1	35,415	1,482775
2009	1	38,044	1,391967
2010	1	44,798	1,329408

Source: InforEuro

## Abbreviations and Acronyms

AB	Agriculture Biologique
ADNAP	Administração Nacional das Pescas
ACP	African, Caribbean and Pacific States (Lomé Convention IV)
ADB	African Development Bank
AEC	African Economic Community
AfDB	African Development Bank
AU	African Union
BET	Bigeye Tuna
CFP	Common Fisheries Policy
CNE	National Electoral Commission
COMESA	Common Market for Eastern and Southern Africa
CPC	Contracting Parties and Cooperating non-Contracting Parties
CPLP	Community of Portuguese Speaking Countries
CPUE	Catch per Unit Effort
DNEP	National Directorate of Fisheries Economics
EC	European Commission
EDF	European Development Fund
EEZ	European Economic Zone
EIB	European Investment Bank
EP	Escola de Pesca
EPA	Economic Partnership Agreement
ES	Spain
EU	European Union
EUR	Euro
FADs	Fish aggregating devices
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FFP	Fundo de Fomento Pesqueiro
FMC	Fisheries Monitoring Centre
FPA	Fisheries Partnership Agreement
FR	France
FRELIMO	Liberation Front of Mozambique
FTE	Full Time Equivalen
FVO	Food and Veterinary Office
GBS	General Budget Support
GDP	Gross Domestic Product
GoF	Government of Mozambique
GRT	Gross Registered Tonnage
GSP	Generalised System of Preferences
GT	Gross Tonnage
HACCP	Hazard Analysis Critical Control Point
HIPC	Heavily Indebted Poor Countries
HIV/AIDS	human immunodeficiency virus /Acquired immune deficiency syndrome
IMF	International Monetary Fund
CPI	Investment Promotion Centre
ICEIDA	Icelandic International Development Agency
ICT	Information and Communication Technology
IDPPE	Instituto De Desenvolvimento De Pesca De Pequena Escala
IEO	Instituto Español de Oceanografía
IIP	Fisheries Research Institute
ILO	International Labour Organisation
IMAF	National Institute of Sea and Borders
INAQUA	(Instituto Nacional de Desenvolvimento da Aquacultura
INIP	Instituto Nacional de Inspeção Pescado
IOC	Indian Ocean Commission
IOTC	Indian Ocean Tuna Commission

IRD	Institut de Recherche pour le Développement
IT	Information Technology
ITCZ	Inter-Tropical Convergence Zone
IUCN	International Union for Conservation of Nature
IUU	Illegal, unreported and unregulated
LDC	Least Developed Country
JSDF	Japan Social Development Fund
MCS	Monitoring Control and Surveillance
MDGs	Millennium Development goals
MoU	Memorandum of Understanding
MSY	Maximum Sustainable Yield
MTEF	Medium-Term Expenditure Framework
NEPAD	New Partnership for Africa's Development
NGO	Non Governmental Organisation
NIP	National indicative Programme
NORAD	Norwegian Agency for Development Cooperation
OAU	Organization of African Unity
ODA	Official Development Assistance
OECD	Organization for Economic Cooperation and Development
OGE	Orçamento Geral Do Estado
OPDS	Organ on Politics, Defence and Security
PAF	Performance Assessment Framework
PALOP	Portuguese speaking African Countries
PARPA	Poverty Reduction Strategy Paper
PDP	Plano Director das Pescas
PPABAS	Sofala Bank Artisanal Fishing Project
PPCDNN	Cabo Delgado and Northern Nampula Artisanal Fishing Project
PPP	Public-Private Partnerships
RASSF	Rapid Alert System for Food and Feed
RENAMO	Mozambique National Resistance
RECs	Regional Economic Communities
RFBs	Regional Fishery Bodies
RFMOs	Regional Fisheries Management Organisations
RPFS	Regional Plan for Fisheries Surveillance in the South-West Indian Ocean
RIP	Regional Indicative Programme
SADC	Southern African Development Community
SAP	Strategic Action Plan
SFA	Seychelles
SKJ	Skipjack tuna
SLL	Surface Longliners
SME	Small and Medium Scale Enterprises
STECF	Scientific, Technical and Economic Committee for Fisheries
SWIOFC	South West Indian Ocean Fisheries Project
SWO	Swordfish
SWOT	Strengths, Weaknesses, Opportunities, Threats
TAC	Total Allowable Catch
TDA	Trans Boundary Diagnostic Analysis
TDCA	Trade Development and Cooperation Agreement
TEDs	Turtle excluder devices
UN	United Nations
UNDP	United Nations Development Programme
US	United States of America
VMS	Vessel Monitoring System
WB	World Bank
WTO	World Trade Organization
WWF	World Wildlife Fund
YFT	Yellowfin Tuna

## EXECUTIVE SUMMARY

1. This report sets out the findings of an ex-post evaluation of the current Fisheries Partnership Agreement between the European Community and the Republic of Mozambique. The study was commissioned by the Directorate General for Maritime Affairs and Fisheries of the European Commission under a framework contract “for performing evaluations, impact analyses and monitoring services in the context of fisheries partnership agreements concluded between the Community and non-member coastal states” operated by a consortium comprising Oceanic Développement (France) and Megapesca Lda (Portugal). The study comprised a review of documentation associated with the protocol and activities conducted under it, and meetings with key stakeholders, including EU fleet operators and representatives of the Government of Mozambique and its fishery sector during a field mission conducted in March 2011.
2. Mozambique is located on the east coast of Southern Africa. It has an area of 801,590 sq km. It is a Less Developed Country (LDC) with a GDP of about US\$428/capita in 2009 (up from US\$220/capita in 2002). UNDP's 2009 Human Development Index places Mozambique in last position among the 14 SADC countries and 176th out of 182 countries listed. According to the latest national progress report on the MDGs produced in 2010, 55% of people lived below the national poverty line. With a population growth rate believed to be around 2.4% the country's population was estimated to be 20.5 million in 2005. HIV/AIDS with infection rates are over 15%. About 80% of the population is rurally located, and works in agriculture or fisheries.
3. Mozambique's economy has shown constant and rapid growth since the cessation in 1992 of a long and costly civil war, following independence from Portugal in 1975. The economy is dominated by transport and transit services, exports of hydro-electricity to neighbouring countries and aluminium smelting. The country suffers from periodic severe flooding, with a loss of life and destruction of infrastructure, which has impacted on the economy. Exports were about US\$2.7 billion in 2008. Imports in the same year were US\$3.8 billion. The trade balance represents a deficit of about 20% of GDP. Foreign reserves are reported to cover about 5 months of imports. The country remains highly dependent on borrowing and foreign aid to make up significant budget deficit of 51% of expenditure in 2010. The main donors are the IDA, USAID and the EU. A significant proportion (23%) of the foreign aid is delivered by budgetary support and the main donors have agreed a common approach. Mozambique has been a member of the WTO since 1995 and a member of SADC since 1992.
4. Successful elections were held, most recently in 2009, which resulted in retention of power by FRELIMO, the former independence movement. Public sector and financial reforms have progressed only slowly. The investment environment remains difficult; Mozambique ranked 135<sup>th</sup> out of 183 countries (in 2010) in the World Bank ease of doing business survey, making it a "high cost economy". It also suffers from endemic corruption, ranking 116<sup>th</sup> out of 178 countries surveyed on the Transparency International's Corruption Perceptions Index. Inflation has remained high (8% in 2007) and there were violent demonstrations against high food and fuel prices in 2010.
5. National development is guided by the poverty reduction strategy (PARPA II 2006-2009) which focuses on improvements in public services in relation to education, health, agriculture and rural development, basic infrastructure, good governance and macroeconomic and financial management. Fisheries sector measures feature strongly in the strategy. The strategy is carried though into the current 5 year development plan.
6. The cooperation strategy with the EU is set out in the National Indicative Programme under the 10<sup>th</sup> EDF, and was adopted by the parties for the period 2008 to 2013. The programmable resources of the NIP amount to EUR 622 million. The strategy is linked to PARPA II with a major focus on to transport infrastructure, regional economic integration and agriculture and rural development. Mozambique is also a potential beneficiary of interventions supported under the 10<sup>th</sup> EDF Regional

Indicative Programme (2008-2013) for the Southern African Region, with an allocated financial envelope of EUR116 million. The country also benefits from some important all-ACP regional programmes. In addition, in April 2009 the EIB and the Government of Mozambique signed an agreement for a loan of EUR 65 million for the rehabilitation of the Beira corridor in Mozambique, complemented by a EUR 29 million interest rate subsidy from the EU-Africa Infrastructure Trust Fund. The finance will support improvements to rail, road and port infrastructure. Mozambique is a party to the signature of the EU-Southern African Development Community SADC Interim Economic Partnership Agreement (2009). The EPA foresees no duties or quotas for 81% of EU exports to Mozambique. Full liberalisation will take place gradually and be in place by 2023.

7. Mozambique benefits from a rich and varied fishery sector. The national marine fishery focuses on coastal resources, producing in 2007 about 75,000 tonnes per year from the coastal artisanal fishery, 12,000 tonnes from the semi-industrial and industrial fisheries. A further 28,000 tonnes is produced from inland fisheries. The artisanal fishery is very important for rural and coastal livelihoods, directly employing some 334,000 fishers in 2007, plus significant numbers in processing and distribution. The industrial fishery is largely focused on shallow and deepwater shrimp species, prosecuted by foreign owned vessels operating in joint ventures with the Government of Mozambique. In addition, foreign flagged vessels, mainly from the EU and Japan are licensed to fish highly migratory resources (tunas and other species) within the Mozambique zone. EU vessels access the zone under the EU-Mozambique Fisheries Agreement. Access arrangements for the non-EU vessels are not transparent. New charges for private licences for foreign vessels were approved by the Government in 2010.
8. Tuna, swordfish, sharks and other highly migratory species are managed by the Indian Ocean Tuna Commission (IOTC). Purse seiners target yellowfin, skipjack and bigeye tunas for cannery supply, using fish aggregating devices (FADs). In 2008 EU flagged purse seine vessels comprised 37 out of 47 such vessels operating in the Indian Ocean. Most of the remainder are flagged to other states (mainly Seychelles) but under EU beneficial ownership. Currently more than 420 surface longliners from about a dozen nations operate in the Indian Ocean, mostly Asian flagged vessels. The French fleet operates from its base in La Reunion and consisted of 43 active vessels in 2009. The Spanish fleet operates from Durban, and comprised 15 vessels in 2009. There are also 3 UK and 3 Portuguese vessels (mostly under Spanish ownership).
9. Shrimp exports earn the country significant revenues, approximately EUR47 million in 2009. 85% of exports are to the EU (Spain and Portugal). South Africa is also an important market for higher value demersal species and some crustacea. Imports of fishery products are increasing rapidly (reaching EUR 28 million in 2009) mostly in the form of small pelagic fish from Namibia and South Africa. Mozambique has advanced fish processing establishments (with 12 approved plants in 2010). Following negative findings by the European Commission in 2006 and 2007, the country has since met the EU's sanitary requirements for fishery products for human consumption. Although it has good environmental conditions for aquaculture production, development has been slow.
10. Fisheries administration, management and development responsibilities fall within the mandate of the Ministry of Fisheries and its subsidiary institutions and directorates. Fisheries policy is focused on poverty reduction by the PARPII. A replacement to the Fisheries Master Plan 1995-2005 was adopted by the Government in 2010, and sets out the objective to increase production from a projected 151,430 tonnes in 2009 to 301,000 tonnes in 2019, with 60% of the increase derived from aquaculture and the balance from (mainly) marine small pelagic resources. The plan also foresees exports rising from US\$70 million in 2009 to US\$176 million in 2019. The plan does not indicate the cost of measures proposed, but the intention is that international donors will support the significant investment required for implementation.
11. During 2007 to 2010 the fisheries component of the general state budget of Mozambique averaged EUR25.6 million, accounting for about 1% of the total. Donor

activity in the sector is significant, with 15 projects currently in implementation, accounting for up to 80% of budget expenditure. About 70% of the donor support is in the field of artisanal fisheries, in line with the strong poverty reduction focus of fisheries policy. All donor projects are on budget and expressed within a single programming document. At least one project, supported by NORAD/ICEIDA (US\$28 million due to start in 2011) will be implemented through budgetary support, funded through the single treasury account. Despite being selected by SADC as the host for a regional MCS centre, Mozambique is prevented from benefiting from financial support under fisheries policy and MCS components of the all-ACP Strengthening Fisheries Management programme (due it already receiving financial support for these areas under the Fisheries Partnership Agreement). For the same reason, neither is it able to participate (without making a financial contribution) in the Regional Plan for Fisheries Surveillance in the SW Indian Ocean (which is supporting the implementation of a regional observer corps). It does however participate in the World Bank/GEF Southwest Indian Ocean Fisheries Project (which is also supporting observer training).

12. Mozambique, with donor support, has made significant improvements in fisheries monitoring, control and surveillance (MCS). A Fisheries Monitoring Centre has been established. A satellite vessel monitoring system is operational, which covers all foreign flagged vessels and a claimed 57% of the national industrial fleet. NORAD has supported the chartering of a patrol vessel, and the supply of fast rigid inflatable vessels for inshore work. About 200 days of patrols were undertaken each year from 2008 to 2010. In 2009, 173 offences were detected by the patrol vessel, and 113 by port-based inspections, mostly in the national semi-industrial fleet. There is only limited capacity to patrol to the extent of the EEZ, and no aerial surveillance capacity. A confiscated vessel, the Antillas Reefer, is being converted to MCS patrol capacity. Observers are mobilised on the national industrial vessels, but so far have not been deployed on foreign flagged vessels, since few of these ever visit Mozambique ports. The Southwest Indian Ocean Fisheries Project is supporting the development of a regional observer corps to allow IOTC Contracting and Co-operating non-Contracting Parties (for which Mozambique has a pending application) to implement IOTC resolutions with regard to observer coverage. Mozambique has notified the Commission of its authorities responsible for implementation of EU regulation 1005/2008 on IUU fishing.
13. The EU-Mozambique Fisheries Partnership Agreement and the First Protocol were adopted by Council Regulation (EC) No 1446/2007 of 22 November 2007, and provide fishing possibilities for EU vessels in Mozambique waters. The shrimp fishing opportunities included in a previous agreement and protocol were eliminated. The Agreement came into force on 1 January 2007 and will expire at the end of 2011. It provides fishing possibilities for up to 44 purse seiners and 45 surface longliners. The fishing possibilities are allocated to Spain, France and Italy (in the case of purse seiners) and Spain, France, Portugal and UK (surface longliners) by Council Decision 2007/798/EC of 22 November 2007. The EU financial compensation amounts to EUR 650,000 per year, based on a reference tonnage of 10,000 tonnes. This is supplemented by a specific amount of EUR 250,000 towards the support of a sectoral fisheries policy of Mozambique. Each vessel drawing an annual licence pays an a licence fee at the rate of EUR35/tonne, with an advance corresponding to a catch of 120 tonnes for purse seine and 100 tonnes for the larger surface longline vessels. Validated catches by a vessel above the nominal catch are subject to an additional licence fee at this rate.
14. During the course of 2007 to 2009, 205 fishing licences were drawn under the Agreement. Sixty eight vessels drew licences in 2007, falling steadily over the course of the Agreement to 36 vessels in 2010. Over the period 2007 to 2010 utilisation was 73% for purse seiners and 43% for surface longliners (overall 58%). In 2010 the utilisation rate fell to 50% (purse seiner) and 31% (surface long liner). Overall France and Spain have made good use of the purse seine opportunities, especially in the early years of the Protocol. The UK and Italy have only made use of the opportunities occasionally. France did not use any of the long line opportunities. The decline in uptake of licences is largely due to the transfer of EU tuna vessels to the Atlantic, in

response to the increased piracy risk in the Indian Ocean. In December 2010, a Mozambique flagged shrimp vessel operated by EU interests was hijacked in the Mozambique zone, and its crew kidnapped, exemplifying the risks.

15. On average, for each year, the Agreement generated catches of 3,380 tonnes of fish, representing 34% of the reference tonnage. Despite a lower number of licences taken, the highest catches were taken in 2010 (4,820 tonnes). Catches from the purse seine segment averaged 2,181 tonnes/year comprising yellowfin tuna (44%), skipjack tuna (49%) and some bigeye tuna (7%). All the catch by this segment is brine frozen onboard for subsequent canning. The catches are discharged in Seychelles, Mauritius, Madagascar and Mombasa. Retained catches from the surface longline segment averaged some 1,200 tonnes/year comprised mainly swordfish (56%) and blue shark (18%) with balance being other species of shark and tunas. The catch is frozen onboard and landed mainly in Durban for transshipment to mainland EU markets.
16. Fishing under the Agreement generated revenues for EU fleet operators valued at EUR 6.1 million/year (at an average price EUR 1,810/tonne). Approximately 37% of the value of the Agreement is attributed to the purse seine segment. The opportunities have become progressively more valuable to the surface longline segment, rising from EUR1.5 million in 2007 to EUR6.1 million in 2010. About 75% of the value of all catches was attributed to catches by Spanish vessels, 18% to France and 5% to Portugal. Licence fee payments by EU vessels averaged EUR249,000/year. Overall, the access costs to the EU fleet represented 4.3% of the value of fish generated. However, purse seiners paid a higher proportion of the revenues in access costs (7.2%) compared to the surface longline segment (2.5%). Out of the 205 licences drawn, 119 vessels declared catches and of these 58 (28 purse seine and 30 surface longliners) paid additional licence fees in respect of supplementary catches. Fishing under the agreement with Mozambique represents just over 1% share of the total turnover of the EU fleets under fishing agreements, but only 0.1% of the turnover of the entire EU fishing fleet. Catches by EU Purse seiners under the Agreement accounted for just 1% of their total in the Indian Ocean. The EU surface longline segment was rather more dependent on the Agreement, accounting for an estimated average 9% of the revenues of this fleet segment from the Indian Ocean (but increasing to 14% in 2010).
17. Employment onboard EU vessels using the Agreement is estimated to be about 1,086 (full time equivalent), of which 375 are EU nationals and 711 of ACP origin. This excludes up and downstream impacts. The employment of non-EU nationals meets the minimum of 8% from ACP countries specified in the Protocol. Since EU vessels operating under the Agreement do not visit Mozambique, employment of nationals is adventitious and minimal, and does not meet the (non-binding) terms for employment of Mozambican crew.
18. The annual cost of the Agreement to the EU budget was EUR650,000 in compensation and EUR250,000 in support of a sustainable fisheries policy. The EU has benefited from an estimated annual value added generated by the EU fleet activities under the Agreement averaging of EUR 2.4 million. This suggests a moderately positive cost benefit ratio of 2.8 (ie. every EUR1 invested from the public account generates EUR2.8 of economic benefits, excluding up and downstream impacts). However, with catches reaching only, on average, 34% of the reference tonnage, this suggests that the European Union has paid for some 6,600 tonnes of unutilised fishing opportunities each year, corresponding to an average annual overpayment of about EUR430,000. These data suggest that whilst the Agreement has been effective in generating positive economic benefits for the EU in line with the common fisheries policy objectives, it has only been a moderately efficient instrument.
19. The Agreement has generated income for the Government of Mozambique in the form of an annual financial contribution from the European Union of EUR 900,000 plus the licence fee payments totalling an average of EUR 1,149,000/year. This has contributed between 3.6% and 6.0% of the fisheries budget (average 4.5%) and 0.05% of the overall state budget. The FPA provided about 60% of the income

generated by Mozambique from this fishery and has therefore clearly been in Mozambique's interest. However, since EU vessels did not visit Mozambique, and there was little or no employment of nationals, there have been no other direct benefits derived from the Agreement. The Agreement contributes an estimate 0.02% of Mozambique's GDP. The Ministry of Fisheries of Mozambique is also concerned regarding non-submission of catch reports in accordance with the Protocol. It served legal notices on five Spanish longliners in 2010, resulting in fines. There is no evidence of non-reporting to the flag Member States. Mozambique is also concerned regarding its non-participation in the catch validation process undertaken by Member State scientific institutes, and seeks to be involved, in line with agreements made during negotiation of the Protocol.

20. Although Mozambique is a signatory of the UN Convention on the Law of Sea no maritime boundaries have been established, except with Tanzania to the North. Boundary issues are complicated by territorial disputes between France and Madagascar over sovereignty of islands in the Mozambique channel, and by lack of recognition by Comoros Islands regarding the Mozambique-Tanzania boundary. There are discrepancies between the EEZ claimed by Mozambique and the coordinates of the fishing zones defined in the Protocol, which with Mozambique's enhanced VMS capacity, could result in misunderstandings regarding entry/exit reports and catch declarations.
21. A programme of policy support measures under the partnership approach was not considered by the Joint Committee until its first meeting in November 2008, almost 2 years into the Agreement. The measures were not subsequently formally linked to the Fisheries Master Plan II adopted in 2010. The measures have little internal coherence, and appear not to have been integrated within a wider matrix of fisheries policy measures supported by the state budget and other international donors. None of the agreed measures at any stage have been associated with a budgeted cost, which renders monitoring of the financial implementation impossible. The parties have not engaged in any substantive policy dialogue. Mozambique is prevented by administrative considerations from exploiting potential opportunities for synergies between the FPA measures and EU funded regional programmes (ACP Fish II, and Regional Plan for Fisheries Surveillance). Overall the partnership approach has not been effectively implemented by the parties.
22. IOTC has advised that catches of yellowfin tuna in the Indian ocean should not exceed the estimated maximum sustainable yield (MSY) of 300,000 tonnes, and that although it has been overexploited in the past, current catches (which include artisanal fisheries) are considered to be within this limit. Skipjack tuna stocks are considered to be in healthy state. Bigeye tuna stocks are considered to be healthy and within the MSY of 114,000 tonnes. Purse seining has only limited impact on non-target species. Given the limited contribution (about 0.3%) of the EU – Mozambique FPA to the total catches of each of these species in the Indian Ocean, the purse seine opportunities have only very limited impacts on stocks.
23. For swordfish, the overall level of exploitation in the Indian Ocean appears to be within sustainable limits, currently being below the estimated MSY of 29,000 tonnes. The overall reduction in number of surface longline vessels in recent years has also reduced concerns. Fishing under the EU Mozambique FPA accounts for only a limited proportion (2.6%) of the total exploitation of this species in the Indian Ocean. However there may be a sub-population of swordfish in the southwest Indian Ocean (which includes the Mozambique zone), which has experienced unsustainable levels of fishing for several years up to 2008. The IOTC Scientific Committee has recommended that catches in the SW should be maintained at a level below 6,400 tonnes, but this recommendation has not been adopted by IOTC. Annual EU catches of this species in Mozambique zone alone have increased during the course of the Agreement to almost 1,100 tonnes in 2010 (17% of the recommended catch limit). This fishery for swordfish should be monitored closely to ensure that fishing is at sustainable levels.
24. There are also concerns regarding the sustainability of catches of blue shark and short finned mako shark. These species are classified by IUCN respectively as “near



threatened” and “vulnerable” at global level. Data on catches and the stock status is insufficient to make management recommendations, largely due to non-reporting and mis-reporting of catches by Asian fleets. Surface longlining is also implicated in bycatches of other shark species, turtles and some seabirds, but there is a general lack of data regarding specific impacts. EU catches of blue shark and shortfin mako under the Agreement account for 2.4% and 5.2% respectively of total catches in the Indian Ocean. There is therefore a risk that EU surface longline vessels operating under the Agreement may have made a small but finite contribution to an unsustainable exploitation of these species. Whilst concerns regarding sustainability of catches of swordfish and sharks and bycatches of turtles and seabirds can only be addressed at the level of all fleets operating in the wider region (via the IOTC), it is not possible to state with certainty that the inclusion of the surface longline opportunities in the Agreement has been in accordance with the principle of responsible fisheries.

25. Overall the study concludes that the first Protocol of the Fisheries Partnership Agreement between the EU and Mozambique has benefited the mutual interests of both parties. For the EU, it has proved to be highly relevant to the Common Fisheries Policy (since it provides access to fishing opportunities for EU vessels, supporting their regional presence in the SW Indian Ocean), with associated moderately positive financial and economic benefits to the EU. For Mozambique it has allowed the generation of financial income from national fisheries resources which at present the country does not have the capacity to exploit. The Agreement has also allowed the parties to maintain a policy dialogue, with a view to promoting responsible fishing, although the success of the partnership approach has so far been limited by the low level of engagement, a weak intervention design and lack of integration with linked donor programmes. There are also concerns regarding the risks that the surface longline fishing opportunities included may have contributed, along with other international fleets, to unsustainable fishing in the Indian Ocean.
26. The creation of differentials in licence fee rates between the purse seine and surface longline segments may also be considered by the parties, with a view to ensuring more equitable access arrangements which better reflect the unit values of the catches made by participating fleet segments. An increase in the minimum catch level used to determine advance licence fees would reduce the administrative costs in processing fees for additional catches. Anomalies in the definition of fishing zones should be addressed. Despite significant improvement in recent years, there is a need to further strengthen vessel monitoring and control. Mozambique's participation in a developing regional observer corps is seen to be critical step, which should be supported by the parties, for example within a revised policy matrix. Mozambique authorities should have the right to undertake port inspections of EU vessels, although there should also be a facility for these to be carried out in other locations (for example port of discharge). Increased collaboration with port states could also be considered.
27. Greater attention needs to be paid to defining catch reporting protocols, and collaborative catch validation procedures should be implemented by invoking a scientific committee under the Agreement. The matrix of policy measures to be supported should be brought into line with the new Fisheries Master Plan (which should have costs attached to the proposed measures), integrated within the single programming document for the fishery sector and greatly simplified to a smaller number of measures of mutual interest to the parties. Barriers to Mozambique's full participation in ACP Fish II and Regional Fisheries Surveillance Programmes should be addressed by amendments to the implementation framework of these programmes, which will also compensate to an extent for any adjustment of the FPA dimensions.

## RESUME EXECUTIF

1. Ce rapport présente les résultats d'une évaluation ex-post de l'Accord de Partenariat dans le domaine de la Pêche en cours entre l'Union Européenne et la République du Mozambique. Cette étude a été demandée par la Direction Générale des Affaires Maritimes et de la Pêche de la Commission européenne sous un contrat-cadre pour « l'évaluation, les études d'impact et des services de suivi dans le contexte des accords de partenariat dans le domaine de la pêche conclus entre l'Union et des Etats tiers côtiers » confié à un consortium comprenant Oceanic Développement (France) et Megapesca Lda (Portugal). L'étude comprend une analyse de la documentation en relation avec l'accord et des activités conduites sous son cadre, et des réunions avec les parties prenantes clés incluant les armateurs de l'UE et des représentants des autorités du Mozambique et de son secteur de la pêche rencontrés lors d'une mission conduite en mars 2011.
2. Le Mozambique est situé sur la côte Est de l'Afrique australe. Le pays couvre une surface de 801 590 km<sup>2</sup>. Il fait partie des Pays les Moins Avancés (PMA) avec un PIB d'environ 428 USD / habitant en 2009 (en augmentation de 220 USD / habitant en 2002). L'indice de développement humain calculé par le PNUD place le Mozambique à la dernière position parmi les pays de la SADC et à la 176ème place sur 182 pays classés. D'après le dernier rapport sur les OMD publié en 2010, 55% des personnes vivent sous le seuil national de pauvreté. Avec un taux d'accroissement de la population estimé être autour de 2,4%, la population du pays était estimée être proche de 20,5 millions d'habitants en 2005. Le taux d'infection VIH/SIDA dépasse les 15%. Environ 80% de la population vit dans les zones rurales et travaille dans les secteurs de l'agriculture et de la pêche.
3. L'économie du Mozambique traverse une période de croissance rapide et constante depuis la fin en 1992 d'une longue et coûteuse guerre civile consécutive à l'indépendance du Portugal en 1975. L'économie est dominée par le secteur des transports, l'exportation d'hydro-électricité vers les pays voisins et l'aluminerie. Le pays est soumis à des périodes de graves inondations causant des pertes de vie humaine et la destruction des infrastructures et générant des impacts sur l'économie. Les exportations se sont montées à environ 2,7 milliards USD en 2008. Les importations la même année ont été de 3,8 milliards USD. Le déficit de la balance commerciale représente 20% du PIB. Les réserves de change sont estimées couvrir 5 mois d'importations. Le pays dépend fortement de l'emprunt et de l'aide internationale pour ses besoins budgétaires. Les principaux donateurs sont l'IDA, l'USAID et l'UE. Une proportion significative de l'aide est délivrée par appui budgétaire (23%) avec une approche commune adoptée par les différents bailleurs. Le Mozambique est membre de l'OMC depuis 1985 et membre de la SADC depuis 1992.
4. Les dernières élections tenues en 2009 ont abouti à la reconduction au pouvoir du FRELIMO, le parti autrefois indépendantiste. Les réformes du secteur public et des finances publiques n'ont progressé que lentement. Le climat de l'investissement reste difficile ; le Mozambique est classé 135ème sur 183 pays dans le palmarès 2010 de la Banque Mondiale concernant la facilité d'entreprendre. Le pays souffre également d'une corruption endémique, étant classé par *Transparency International* à la 116ème place sur 178 pays dans le palmarès sur la perception de la corruption. L'inflation est restée élevée (8% en 2007) et il y a eu des manifestations violentes en 2010 contre les hausses des prix alimentaires et des carburants.
5. La politique nationale de développement est guidée par la stratégie de réduction de la pauvreté (PARPA II 2006-2009) qui se focalise sur l'amélioration des services publics en matière d'éducation, de santé, d'agriculture et développement rural, des infrastructures de base, de la bonne gouvernance et de la gestion financière. Le secteur de la pêche apparaît nettement dans la stratégie qui est mise en œuvre au travers d'un plan quinquennal actuellement en cours.
6. La stratégie de coopération avec l'UE est définie dans le Programme Indicatif National (PIN) adopté par les deux parties pour la période 2008-2013 du 10ème FED.

Les ressources programmables du FED pour le PIN se montent à 622 millions EUR. La stratégie est liée au PARPA II avec comme secteur de concentration les infrastructures de transport, l'intégration économique régionale, l'agriculture et le développement rural. Le Mozambique est également un bénéficiaire potentiel des interventions prévues sous le 10<sup>ème</sup> FED régional pour la région Afrique Australe, avec une enveloppe de 116 millions EUR. Le pays bénéficie également de plusieurs programmes tous-ACP importants. Par ailleurs, en avril 2009, la BEI et le Gouvernement du Mozambique ont signé un accord pour un prêt de 65 millions EUR pour la réhabilitation du corridor de Beira complété par un prêt à intérêts subventionnés imputé sur le Fonds fiduciaire UE-Afrique pour les infrastructures. Ces financements contribueront à améliorer les infrastructures ferroviaires, routières et portuaires. Le Mozambique est partie de l'accord intérimaire de Partenariat Economique UE-SADC. L'APE prévoit une exemption de droits ou des quotas pour 81% des exportations européennes vers le Mozambique. La libéralisation totale du commerce se mettra en place graduellement pour être pleinement en vigueur en 2023.

7. Le Mozambique bénéficie d'un secteur de la pêche riche et varié. La pêche nationale se concentre sur l'exploitation des ressources côtières avec une production en 2007 proche de 75 000 tonnes par le secteur artisanal et 12 000 tonnes par le secteur semi-industriel et industriel. Les pêcheries continentales apportent une production supplémentaire de 28 000 tonnes. Le secteur artisanal est très important pour les moyens d'existence des populations rurales et côtières, employant directement quelques 334 000 pêcheurs en 2007, plus des effectifs significatifs dans la transformation et la distribution. La pêche industrielle concerne essentiellement l'exploitation de la crevette côtière et profonde avec des navires contrôlés par des intérêts étrangers sous régime de sociétés mixtes avec le Gouvernement du Mozambique. Par ailleurs, des navires de pêche étrangers, principalement de l'UE et du Japon, ont des licences pour exploiter les espèces hautement migratoires (thons et autres espèces) dans la zone du Mozambique. Les navires de pêche de l'UE ont accès à la zone sous l'accord de pêche UE-Mozambique. Les accords concernant l'accès de navires non-UE ne sont pas dans le domaine public. Une nouvelle grille tarifaire concernant les licences de pêche pour les navires étrangers a été adoptée par le Gouvernement en 2010.
8. Les thonidés, les requins et les autres espèces hautement migratoires sont gérées par la Commission des Thonidés de l'Océan Indien (CTOI). Les senneurs ciblent l'albacore, le listao et le patudo pour l'approvisionnement des conserveries en utilisant des dispositifs de concentration du poisson (DCP). En 2008, la flotte des senneurs sous pavillon d'un Etat membre de l'UE comprenait 37 navires sur les 47 navires de ce type qui opèrent dans l'océan indien. Les autres navires battent pavillon d'autres Etats (les Seychelles principalement) mais sont sous contrôle d'intérêts européens. Actuellement, plus de 420 palangriers sous pavillon d'une douzaine de pays, principalement asiatiques, travaillent dans l'océan indien. La flotte française travaille à partir de sa base sur l'île de la Réunion et intégrait 43 navires actifs en 2009. La flotte palangrière espagnole opère à partir de Durban et comprenait 15 navires en 2009. Il existe également 3 palangriers britanniques et 3 portugais (principalement sous contrôle espagnol).
9. Les exportations de crevettes rapportent au pays des revenus significatifs, environ 47 millions EUR en 2009. 85% des exportations vont vers l'UE (Espagne et Portugal). L'Afrique du Sud est également un marché important pour les espèces démersales à haute valeur et quelques crustacés. Les importations de produits de la pêche augmentent rapidement (atteignant 28 millions EUR en 2009), principalement sous la forme de petits pélagiques importés de Namibie et d'Afrique du Sud. Le Mozambique dispose d'établissements de transformation modernes (12 usines agréées en 2010). Suite à des résultats négatifs d'inspections par la Commission européenne en 2006 et 2007, le pays respecte dorénavant les exigences sanitaires de l'UE pour les produits de la pêche. Bien que les conditions environnementales soient propices à la production aquacole, les développements en ce domaine ont été lents.

10. L'administration, la gestion et le développement du secteur font partie du mandat du Ministère de la Pêche et des institutions et directions rattachées. La politique de la pêche se focalise sur la réduction de la pauvreté suivant les lignes du PARPII. Un texte remplaçant le Plan Directeur des Pêche 1995-2005 a été adopté par le Gouvernement en 2010 et fixe comme objectifs l'accroissement de la production de 151 430 tonnes en 2009 à 310 000 tonnes en 2019, intégrant une augmentation de 60% du secteur de l'aquaculture et le solde principalement de l'exploitation des ressources en petits pélagiques. Le plan prévoit également l'augmentation des exportations de 70 millions USD en 2009 à 176 millions USD en 2019. Le programme n'indique pas le coût des mesures proposées, mais l'intention est que les bailleurs internationaux soutiennent les investissements nécessaires pour la mise en œuvre de ce plan.
11. Sur la période 2007-2010, la dotation du budget national du Mozambique pour le secteur de la pêche a été de 25,6 millions EUR, soit environ 1% du budget total. Les bailleurs de fonds sont actifs dans le secteur avec 15 projets en cours de réalisation, représentant 80% des dépenses budgétaires. Environ 70% des financements des bailleurs se focalise sur le secteur des pêche artisanal en cohérence avec la priorité de réduction de la pauvreté de la politique sectorielle. L'ensemble des projets des bailleurs sont inscrits dans le budget et sont consolidés dans un document de programmation unique. Au moins un projet sponsorisé par le NORAD/IECEIDA (28 millions USD devant commencer en 2011) sera mise en œuvre par appui budgétaire et financé sur les ressources du compte unique du trésor. Bien que le pays ait été sélectionné par la SADC comme lieu d'implantation d'un centre régional de surveillance des pêches, le Mozambique ne peut recevoir de soutiens financiers sous les composantes politique des pêche et SCS du programme tous-ACP de renforcement des capacités de gestion des pêches ACP FISH II (lié au fait que le pays reçoit déjà un tel support sous l'accord de partenariat dans le domaine de la pêche). Pour les mêmes raisons, le Mozambique ne peut participer (à moins de contribuer financièrement) au plan régional de surveillance dans le sud-ouest de l'océan indien (qui soutient la constitution d'un corps d'observateurs régionaux). Le pays participe cependant au projet Banque Mondiale / FEM SWIOFP (qui intègre la formation des observateurs).
12. Grace au soutien des bailleurs de fonds, la fonction suivi, contrôle et surveillance (SCS) des pêche au Mozambique s'est améliorée de manière significative. Un Centre de Surveillance des Pêches a été créé. Un système de suivi des navires par satellite est opérationnel permettant de suivre tous les navires étrangers et 57% de la flotte industrielle nationale. La NORAD a contribué à l'affrètement d'un navire de patrouille et à l'achat de navires pneumatiques rigides rapides pour les opérations dans la bande côtière. Environ 200 jours de patrouille par an ont pu être effectués par année entre 2008 et 2010. En 2009, 173 infractions ont été détectées par le navire de patrouille, et 113 par des inspections au port, la plupart concernant la flotte de pêche semi-industrielle. Les capacités pour surveiller les parties hauturières de la ZEE restent limitées, et il n'existe pas de surveillance aérienne. Un navire, l'Antillas Reefer, confisqué par les autorités du Mozambique est en train d'être reconverti à des fins de surveillance. Des observateurs sont embarqués à bord des navires industriels nationaux, mais n'ont pas été déployés sur des navires étrangers car ces derniers fréquentent peu les ports du pays. Le *Southwest Indian Ocean Fisheries Project* soutient le développement d'un corps d'observateurs régionaux afin de permettre aux parties contractantes et coopérantes de la CTOI (auprès de qui le Mozambique a déposé un dossier d'adhésion) de mettre en œuvre les résolutions de la CTOI en matière de couverture observateurs. Le Mozambique a notifié à la Commission le nom de ses autorités en charge de la mise en œuvre du Règlement UE 1005/2008 contre la pêche INN.
13. L'accord de Partenariat dans le domaine de la Pêche et son premier protocole ont été adoptés par le Règlement (CE) du Conseil 1446/2007 du 22 novembre 2007. L'accord prévoit des possibilités de pêche dans les eaux du Mozambique pour des navires de pêche de l'UE. Les possibilités de pêche crevette qui existaient sous l'accord et le protocole précédent ont été éliminées. L'accord est entré en vigueur le 1er janvier 2007 et expirera à la fin de 2011. Il intègre des possibilités de pêche pour

un maximum de 44 senneurs et 45 palangriers de surface. Les possibilités de pêche sont allouées à l'Espagne, la France et l'Italie (en ce qui concerne les senneurs), et à l'Espagne, la France, le Portugal et le Royaume-Uni (en ce qui concerne les palangriers de surface) par la Décision 2007/798/CE du 22 novembre 2007. La compensation financière payée par l'UE se monte à 650 000 EUR par an sur la base d'un tonnage de référence de 10 000 tonnes. Un montant spécifique de 250 000 EUR vient en addition pour le soutien à la politique sectorielle du Mozambique. Les navires de l'UE paient des droits d'accès basés sur une valeur de 35 EUR par tonne de capture, avec une avance correspondant à 120 tonnes pour les senneurs et 100 tonnes pour les grands palangriers de surface. Les captures au-delà de ces seuils donnent lieu à des paiements additionnels.

14. Entre 2007 et 2009, un total de 205 licences de pêche a été tiré sous l'accord. 68 navires ont pris une licence en 2007 mais leur nombre a régulièrement chuté ensuite pour atteindre 36 en 2010. En moyenne sur la période 2007-2010, l'utilisation a été de 73% pour les senneurs et de 43% pour les palangriers de surface (58% en moyenne au global). En 2010, le taux d'utilisation est tombé à 50% (senneurs) et 31% (palangriers de surface). Globalement, la France et l'Espagne ont bien utilisé les possibilités senneurs, surtout en début de protocole. L'Italie et le Royaume-Uni n'ont utilisé les possibilités que sporadiquement. La France n'a utilisé aucune de ses possibilités palangrières. La décroissance du taux d'utilisation est à mettre en relation avec le transfert de navires thoniers vers l'Atlantique en réponse aux risques croissants de piraterie dans l'océan indien. En décembre 2010, un crevettier pavillonné au Mozambique et contrôlé par des intérêts européens a été attaqué et son équipage enlevé, prouvant s'il en était besoin le niveau de risque.
15. En moyenne annuelle, les captures réalisées dans le cadre de l'accord se sont montées à 3 380 tonnes, représentant 34% du tonnage de référence. En dépit d'un faible nombre de licences tirées, les captures les plus élevées ont été réalisées en 2010 (4 820 tonnes). Les captures du segment des senneurs ont été en moyenne de 2 181 tonnes par an comprenant de l'albacore (44%), du listao (49%) et du patudo (17%). Toutes les captures de ces navires sont congelées en saumure pour la transformation industrielle en conserves. Les captures sont déchargées aux Seychelles, à Maurice, à Madagascar et à Mombasa. Les captures du segment des palangriers de surface se sont montées à près de 1 200 tonnes en moyenne annuelle comprenant principalement de l'espadon (56%) et du requin bleu (18%). D'autres espèces de thonidés et de requins composent le restant des captures. Les captures sont congelées à bord et débarquées principalement à Durban pour transbordement et acheminement vers le marché de l'UE.
16. Les activités de pêche sous l'accord ont permis aux opérateurs européens de générer un chiffre d'affaires estimé à 6,1 millions EUR par an (à un prix moyen de 1 181 EUR / tonne). Environ 37% de la valeur de l'accord est attribuée au segment senneur. Les possibilités de pêche sont devenues progressivement plus intéressantes pour le segment palangriers, augmentant de 1,5 millions EUR en 2007 à 6,1 millions EUR en 2010. Environ 75% des captures ont été obtenues par des navires de l'Espagne, 18% par des navires de la France et 5% par des navires du Portugal. Le montant des licences payées par les armements européens se monte à 249 000 EUR en moyenne par an. Le coût de l'accès payé par les navires représente globalement 4,3% du chiffre d'affaires. Cependant, les navires senneurs ont payé une proportion plus élevée du chiffre d'affaires en droits d'accès (7,2%) que les palangriers (2,5%). Sur les 205 licences tirées, 119 navires ont déclaré des captures et parmi eux, 58 (28 senneurs et 30 palangriers de surface) ont payé des frais d'accès additionnels suite à des captures au-delà des seuils de référence. Les activités de pêche dans la zone du Mozambique représentent 1% des captures des flottes de l'UE travaillant sous accords de pêche bilatéraux, et moins de 0,1% du chiffre d'affaires des flottes de pêche de l'UE. Les captures des senneurs sous l'accord avec le Mozambique représentent 1% de leurs captures dans l'océan indien. Le segment des palangriers de surface est plus dépendant de l'accord avec le Mozambique dans la mesure où celui-ci représente 9% d chiffre d'affaires de ce segment dans l'océan indien (augmentant à 14% en 2010).

17. L'emploi à bord des navires de l'UE utilisant l'accord est estimé proche de 1 086 (équivalent temps-plein), dont 375 ressortissants de l'UE et 711 ressortissants de pays ACP. Ce nombre ne tient pas compte des emplois induits dans les filières connexes en amont et en aval. L'emploi de ressortissants de pays tiers respecte le minimum de 8% de ressortissants ACP précisé dans le protocole. Les navires de l'UE utilisant le protocole ne fréquentant pas les ports du Mozambique, l'emploi de mozambicains est fortuit et minimal, et ne respecte pas les termes (non-contraignants) pour l'emploi d'équipages nationaux.
18. Le coût annuel de l'accord pour le budget de l'UE a été de 650 000 EUR en tant que compensation financière plus 250 000 EUR en appui à la politique sectorielle. La valeur ajoutée générée au bénéfice de l'UE par l'activité des flottes se monte à 2,4 millions EUR en moyenne par an. Ceci suggère un rapport coût-bénéfice modérément positif de 2,8 (i.e. chaque euro investi par la puissance publique génère 2,8 EUR de bénéfice économique, sans tenir compte des filières amont et aval). Cependant, avec des captures moyennes qui n'atteignent en moyenne que 34% du tonnage de référence, l'Union Européenne a payé pour quelques 6 600 tonnes en possibilités de pêche non utilisées en moyenne par année, correspondant à un paiement excédentaire de 430 000 EUR. Ces informations indiquent que bien que l'accord ait eu des impacts économiques positifs sur le secteur européen en lien avec les objectifs de la politique commune de la pêche, l'efficacité de l'instrument est modérée.
19. L'accord a apporté au Mozambique un revenu annuel de 900 000 EUR sous la forme d'une contribution annuelle de l'Union Européenne auquel s'ajoutent les paiements des armateurs européens pour un montant total annuel de 1 149 000 EUR par année. Ce montant représente une contribution au budget sectoriel pêche variant entre 3,5% et 6,0% (moyenne de 4,5%) de 0,05% au budget total de l'Etat. L'accord procure au Mozambique 60% des recettes venant de son secteur de la pêche. Il est donc clairement dans l'intérêt du pays. Cependant, dans la mesure où les navires européens n'ont pas utilisé les ports nationaux ni employé des ressortissants locaux, il n'y a pas eu d'autres bénéfices directs dérivés. L'accord représente 0,02% du PIB du Mozambique. Le Ministère en charge de la pêche a exprimé des préoccupations à propos de l'absence de soumissions de déclarations de captures suivant les règles du protocole. Il a poursuivi 5 palangriers espagnols en 2010, sanctionnés par des amendes. Il n'existe pas de preuves de non-déclarations envers les Etats membres de pavillon. Le Mozambique est également préoccupé par sa non-implication dans le processus de validation des captures mis en œuvre par les instituts scientifiques des Etats membres, et souhaite le devenir comme évoqué lors des négociations du protocole.
20. Bien que le Mozambique soit un des signataires de la Convention des Nations Unies sur le Droit de la Mer, les limites maritimes de sa ZEE n'ont pas été établies, sauf celle au Nord avec la Tanzanie. La délimitation de la ZEE est rendue difficile par des revendications sur la souveraineté d'îles dans le Canal du Mozambique contestées avec la France et Madagascar, et par une absence de reconnaissance de la limite Mozambique-Tanzanie par les Comores. Il existe des différences entre les limites de la ZEE déclarées par le Mozambique et les coordonnées de la zone de pêche figurant dans le Protocole. Etant donné les capacités avancées du pays en matière de suivi des navires par satellite, cette situation pourrait conduire à des malentendus concernant les déclarations entrées sorties de zone et de captures.
21. Une programmation des mesures à soutenir en faveur de la politique sectorielle n'a pu être examinée par la Commission Mixte que lors de sa première réunion en novembre 2008, soit près de deux années après l'entrée en vigueur de l'accord. Ces mesures n'ont pas ensuite été formellement liées au plan directeur des pêches adopté en 2010. Les mesures montrent peu de cohérence interne et apparaissent ne pas avoir été intégrées à une matrice de mesures de portée plus large soutenues par le budget de l'Etat et les bailleurs de fonds internationaux. Aucune des mesures approuvées n'ont été évaluées budgétairement, ce qui rend le suivi de la mise en œuvre financière du partenariat impossible. Les parties ne se sont pas engagées dans un dialogue sectoriel substantiel. Le Mozambique est empêché par des

dispositions administratives de bénéficier de synergies possibles entre l'accord et les programmes régionaux financés par l'UE (ACP Fish II et le plan régional de surveillance). Globalement, l'approche partenariat n'a pas été mise en œuvre de manière efficace par les deux parties.

22. L'avis formulé par la CTOI est que les captures d'albacore dans l'océan indien ne devraient pas dépasser le rendement maximal durable de 300 000 tonnes, et bien que l'espèce ait été surexploitée par le passé, les captures actuelles (y compris celle des pêcheries artisanales) sont dans les limites durables. Le stock de listao est considéré comme étant dans un état satisfaisant. Les captures de patudo sont considérées comme soutenable et dans les limites du RMD de 114 000 tonnes. La pêche à la senne n'a qu'un impact limité sur les espèces non-ciblées. Du fait de la contribution limitée (environ 0,3%) de l'accord UE-Mozambique dans les captures totales de chacune de ces espèces dans l'océan indien, les possibilités de pêche à la senne sous l'accord n'ont eu qu'un impact très limité sur les stocks.
23. En ce qui concerne l'espadon, le niveau d'exploitation actuel dans l'océan indien apparaît comme étant dans les limites viables, pour le moment inférieures au RMD de 29 000 tonnes. Les réductions globales du nombre de palangriers ces dernières années ont permis d'améliorer la situation. Les captures réalisées sous l'accord UE-Mozambique ne représentent qu'une proportion limitée (2,6%) de l'exploitation totale de cette espèce dans l'océan indien. Cependant, il pourrait exister une sous-population dans le sud-ouest de l'océan indien (incluant la zone Mozambique) qui aurait été en état de surexploitation jusqu'en 2008. Le Comité Scientifique de la CTOI a recommandé que les captures dans le sud-ouest devraient être maintenues sous un niveau inférieur à 6 400 tonnes, mais cette recommandation n'a pas été adoptée par la CTOI. Les captures annuelles de cette espèce dans la zone Mozambique ont augmenté pendant l'accord jusqu'à pratiquement 1 100 tonnes en 2010 (17% de la limite recommandée). La pêcherie d'espadon devrait être suivie avec attention pour s'assurer qu'elle reste exploitée dans des limites durables.
24. Il existe également des préoccupations sur la durabilité des captures de requins bleus et de requins mako. Ces espèces sont classées par l'UICN respectivement comme « presque menacé » et « vulnérable » au niveau global. Les données sur les captures et l'état des stocks sont insuffisantes pour émettre des recommandations de gestion, principalement en raison d'une sous-déclaration des captures par les flottes asiatiques. Les palangriers de surface sont également à l'origine de captures accessoires d'autres espèces de requins, de tortues et d'oiseaux de mer, mais il manque des données pour évaluer les impacts spécifiques. Les captures de l'UE de requins bleus et de requins mako sous l'accord représentent environ 2,4% et 5,2% respectivement des captures dans l'océan indien. Les questions relatives à l'impact de ces captures sur la durabilité des stocks ne peuvent être traitées qu'à l'échelle de l'océan indien et pour toutes les flottes de pêche. Il n'est pas possible d'analyser si l'inclusion des possibilités de pêche palangrière sous l'accord ont respecté les principes de la pêche responsable.
25. Globalement, l'étude conclut que le premier protocole sous l'accord de Partenariat dans le domaine de la pêche entre l'UE et le Mozambique ont été d'un bénéfice mutuel pour les deux parties. Pour l'UE, l'accord est pertinent au regard de la Politique Commune de la Pêche (car il procure des possibilités de pêche à des navires de l'UE, contribuant à leur présence dans le sud-ouest de l'océan indien), avec des bénéfices économiques et sociaux positifs mais modérés sur le secteur de l'UE. Pour le Mozambique, l'accord a permis de recevoir des revenus financiers d'une ressource que les pêcheries nationales ne pouvaient exploiter jusqu'à présent. L'accord a également permis aux deux parties de maintenir un dialogue politique sectorielle recherchant la promotion de pratiques de pêche responsables, bien que le succès de cette approche partenariat ait été limité par un faible niveau d'implication, un cadre d'intervention présentant des lacunes et une faible intégration avec les programmes financés par l'aide internationale. Il existe également un risque que les possibilités de pêche palangrières puisse avoir contribué, avec les autres flottes internationales, à des pêches non-soutenables dans l'océan indien.

26. La création de tarifs licences différents entre les palangriers et les senneurs pourrait être considérée par les deux parties afin d'assurer des conditions d'accès plus équitables qui reflèteraient mieux la valeur unitaire des espèces recherchées. Une augmentation des seuils de captures utilisés pour déterminer l'avance à payer en redevance d'accès permettrait de réduire les coûts administratifs de traitement des captures additionnelles. Les anomalies dans la définition de la zone de pêche devraient être corrigées. En dépit de progrès substantiels réalisés ces dernières années, le cadre de contrôle et de surveillance doit continuer d'être renforcé. La participation du Mozambique à la constitution d'un corps d'observateurs est considérée comme une étape critique qui devrait être soutenue par les deux parties, au moyen par exemple d'une inclusion de la mesure dans la matrice. Les autorités du Mozambique devraient avoir le droit de procéder à des inspections au port des navires de l'UE, avec des provisions pour les réaliser dans d'autres endroits (par exemple dans les ports de débarquement). Une coopération accrue entre les Etats du port pourrait être également envisagée.
27. Une attention particulière devrait être portée à la définition des règles de déclaration des captures, avec une collaboration dans le processus de validation dans le cadre d'un comité scientifique conjoint sous l'accord. La matrice des mesures de politique sectorielle à considérer devrait être rattachées au nouveau plan directeur des pêches (avec les budgets réservés à ces mesures), et intégrée dans un document de programmation unique pour le secteur de la pêche, avec une simplification vers un nombre inférieur de mesures d'un intérêt bénéfique mutuel pour les deux parties. Les obstacles à la pleine participation du Mozambique au programme ACP Fish II et au programme régional de surveillance devraient être levés en amendant les cadres de mise en œuvre de ces programmes, ce qui compenserait d'éventuels ajustements des dimensions de l'accord.



# 1 INTRODUCTION

In December 2006 the EU and Mozambique concluded a bilateral Fisheries Partnership Agreement. This Agreement provides fishing possibilities exclusively for highly migratory species for EU vessels fishing in Mozambican waters. It entered into force on the 1 January 2007. The current protocol, which sets out the fishing possibilities for EU vessels in the EEZ of Mozambique, and the corresponding financial commitments, expires on 31 December 2011. The Fisheries Partnership Agreement with Mozambique is part of a network of fisheries agreements between the EU and other coastal States in the Indian Ocean, which include Seychelles, Comoros Islands, Madagascar and Mauritius (the latter with no protocol in force since 2007).

The purpose of this evaluation study is to provide the European Commission with the data and technical analyses needed to prepare the negotiation of a new protocol of the Fisheries Partnership Agreement (FPA) between the EU and Mozambique. Findings from this report may also be used to evaluate EU policy with regard to this Agreement in particular and Fisheries Partnership Agreements in general.

This final report presents information collected from various sources, including the European Commission, EU Member States and the professional associations of EU vessel operators concerned with the availability and utilisation of fishing possibilities. It also includes the findings of a mission to Mozambique which took place in March 2011, during which discussions were held with Mozambique stakeholders to the Agreement, including public authorities, private sector and NGOs.

## 2 GENERAL BACKGROUND

### 2.1 Geography

The Republic of Mozambique is located on the east coast of Southern Africa. It has an area of 801,590 sq km. Mozambique is predominantly a flat, coastal plain, rising in the centre and north to a plateau of more than 500 metres and mountains of up to 2,600 metres in height. Rainfall in the south is scarce, outside of a narrow coastal strip, and the interior is generally a dry, drought-prone savannah in which animal husbandry is the main economic activity. Rainfall is higher and less erratic in the central and northern regions, which have a higher population density and are the main agricultural regions. The country is crossed by a number of large rivers, including the Limpopo, Lurio, Rovuma, Save and Zambezi.

An abundance of cheap hydroelectricity is one of the country's most significant resources, and has helped to attract foreign investment. Hydroelectric production is centred on the Cahora Bassa dam on the Zambezi River. The country still has considerable untapped hydroelectric potential. Natural gas has also been found in commercial quantities and exploitation, mainly for export, is under way. In addition, Mozambique, with a 2,700-km coastline, has significant marine resources. Shrimp were the country's main export until the development of the aluminium industry. Mineral resources are also abundant, including reserves of gold, gemstones, titanium, coal and bauxite, although there is little significant development to date.

Mozambique is prone to extremes of climate and periodically suffers severe droughts and floods. As with other countries in the region, it is likely to be negatively affected by global climate change as seasonal shifts in the Inter-Tropical Convergence Zone (ITCZ), responsible for the subcontinent's rainfall patterns, become increasingly erratic. The 1992 drought was the worst of the 20<sup>th</sup> century, although subsequent rainfall was above average, underpinning rising agricultural production. In the first quarter of 2000, a huge flood hit the southern and central provinces of Maputo, Gaza, Inhambane and Sofala as heavy rains caused rivers to burst their banks. Apart from an estimated 700 deaths, over 1m people were displaced and economic activity was seriously disrupted. Homes, factories and critical infrastructure such as roads and bridges were damaged and destroyed, constituting a major setback for the country. Extensive international assistance was received after the 2000 floods but further serious flooding took place in the first quarter of 2001 in central regions. Severe floods have also occurred in 2008 and 2009. However the impact was less severe, as early warning systems

had become more developed. Some donor funds have been directed towards flood prevention, although the scale of the task remains immense.

## 2.2 Population

The 2007 Population Census recorded a population of 20.5 million, an increase of 28% since the 1997 census (average growth of 2.45% per year), with wide variations between the 10 provinces and Maputo City. Based on projections from the National Institute of Statistics (INE) the total estimated population of Mozambique in 2006 was 22 million.

However, these estimates have not taken into account the effects of mortality due to AIDS (the national infection rate among adults is over 15%, with four provinces registering rates above 20%). Currently some 140,000 people die from AIDS each year and about half a million children have lost one or both parents to the disease. At the macro-economic level, projections suggest that the HIV/AIDS epidemic had reduced GDP by some 14-20% by 2010<sup>1</sup>.

## 2.3 Political situation

Independence was declared unilaterally by the revolutionary Frelimo Party on 25<sup>th</sup> June 1975, ending almost five centuries of Portuguese administration of the territory. Thereafter the economy declined rapidly in the wake of departure of Portuguese settlers and Asian traders, and the adoption of central planning. This was followed by a devastating civil war between Frelimo and Mozambique National Resistance (RENAMO) forces which led to a collapse in production, destruction of infrastructure, a large build-up of foreign debt, and the displacement of more than four million people (out of a population of 12 million in 1980). An UN-backed peace agreement ended the civil war in 1992. The prospects for economic growth only became favourable after the peace agreement in 1992 and the first multiparty elections which took place in 1994.

Mozambique is governed by the revised Constitution adopted on 16 November 2004. The President of the Republic functions as the head of state, head of government, and commander-in-chief of the armed forces. He is directly elected for a five-year term.. The Council of State is the advisory body of the President and shall be consulted before dissolution of the parliament; declaration of war, referendum and general elections. The Prime Minister is appointed by the President. His functions include convening and chairing the Council of Ministers (cabinet), advising the President, assisting the President in governing the country, and coordinating the functions of the other Ministers. The Legislative branch comprises the Assembly of the Republic with 250 members, elected for a five year term by proportional representation. The judiciary comprises a Supreme Court and provincial, district, and municipal courts. Mozambique is divided in 10 provinces (provincias, singular - provincia); Cabo Delgado, Gaza, Inhambane, Manica, Maputo, Nampula, Niassa, Sofala, Tete, Zambezia.

In December 2004, Armando Emílio Guebuza won the third presidential election with 64% of the popular vote, replacing Joaquim Chissano, who had held office for 18 years. His opponent, Afonso Dhlakama of RENAMO, received 32% of the popular vote. FRELIMO won a majority with 160 seats (out of 270) in the National Assembly. Armando Guebuza was inaugurated as the President of Mozambique on February 2, 2005. RENAMO and some other opposition parties made claims of election fraud and denounced the result. These claims

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<sup>1</sup> IFAD Fact Sheet; MOZAMBIQUE COUNTRY PROGRAMME EVALUATION : Number 69, July 2010

[http://www.ifad.org/evaluation/public\\_html/eksyst/doc/profile/pf/mozambique\\_cpe.pdf](http://www.ifad.org/evaluation/public_html/eksyst/doc/profile/pf/mozambique_cpe.pdf)

were supported by international observers (among others by the European Union Election Observation Mission to Mozambique and the Carter Centre) to the elections who criticised the fact that the National Electoral Commission (CNE) did not conduct fair and transparent elections. They listed a whole range of shortcomings by the electoral authorities that benefited the ruling party FRELIMO.

In May 2009, the government approved a new general elections law that contained revisions based on the experience of the 2003 municipal elections. A general election to elect the President, Assembly of the Republic, and Provincial Assemblies was held on 28 October 2009. Incumbent President Armando Guebuza ran for re-election as the FRELIMO candidate; he was once again challenged by opposition leader Afonso Dhlakama. Also standing were Daviz Simango, the Mayor of Beira, who was a RENAMO member before founding his own party, the Democratic Movement of Mozambique (MDM), earlier in 2009. On 11 November, the National Elections Commission officially announced that Guebuza had won the election with 75% of the vote; Dhlakama and Simango trailed with 16.5% and 8.6% respectively. Turnout was estimated at about 42%. SADC observers considered the election result to be a true reflection of the will of the people of Mozambique, but opposition party RENAMO demanded that the election be annulled; the result however stands.

## **2.4 Development status**

UNDP's 2009 Human Development Index places Mozambique in last position among the 14 SADC countries and 176th out of 182 countries listed. Less than 40% of the population has access to national health facilities. In 2004 only 40% of the rural and 50% of the urban population had access to improved sanitation and 52% (rural areas) and 50% (urban areas) to an improved water source. Child mortality is high, especially in rural areas, and chronic malnutrition among children from 0–5 years in provinces like Sofala amounts to 42% (2003).

Seventy percent of the population live in rural areas and four fifths of those depend on agriculture for a livelihood; 90% of all farmers exist at a subsistence level. Poverty, especially in rural areas, remains chronic and widespread despite overall positive growth rates over the last decade. In these areas access to health services, clean water, sanitation facilities and a basic education remain limited, despite some notable improvements in some areas.

According to the latest national progress report on the MDGs produced in 2010, 55% of people lived below the national poverty line.

Reducing the spread of AIDS and establishing proper treatment for those already infected is essential for Mozambique to remain on track in achieving the Millennium Development Goals (MDGs). Progress towards achieving the MDGs and Internationally Agreed Development Goals has been mixed.

## **2.5 Mozambican Economy**

### **2.5.1 Structure of the economy**

Subsistence agriculture, fisheries and farming employ most of the country's labour force. The 2008/09 agriculture season suffered from late planting and pest infestation, especially in the central region. Food production was below forecasts, particularly for maize, cassava, beans and groundnuts which were up only 8.8% rather than the 14.5% expected. The result was that more than 450,000 people faced food shortages in 2009<sup>2</sup>. Sugar production, meanwhile, increased on the back of a US\$ 300 million investment by South African and Mauritian interests in the rehabilitation and partial privatisation of four sugar-processing plants in Maputo and Sofala provinces. This enabled the country to become a net exporter of sugar.

The fisheries sector is of great importance to Mozambique as a source of national income (1.5% of the GDP and 10-15% of foreign exchange earnings in 2005, according to World

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<sup>2</sup> Economy Watch; Mozambique Economy

[http://www.economywatch.com/world\\_economy/mozambique/](http://www.economywatch.com/world_economy/mozambique/)

Bank data), as a source of employment (employing an estimated 334,000 fishermen according to the 2007 Fisheries Census) and many more in support functions, for food security (being the most important source of animal protein also for the poorest sections of the population) and consequently for poverty reduction.

Political stability has allowed a number of large foreign investment projects to be launched in recent years. The Mozal aluminium smelter, the country's largest Foreign Direct Investment project to date, has increased export revenues. More power is needed for additional investment projects in titanium extraction and processing and industrial manufacturing that could further close the import/export gap. At the end of 2007, and after years of negotiations, the state took over Portugal's share of the Cahora Bassa Hydroelectric power (HCB) company, a dam that was not transferred to Mozambique at independence because of the ensuing civil war and unpaid public debts. Two major coal mining investments are being implemented: the Moatize project led by Brazil's Vale, and the Benga mine involving the Australian company Riversdale and the Indian conglomerate Tata.

The government implemented a Poverty Reduction Strategy Paper (PARPA, 2006-2010) with a focus on improving the country's infrastructure. As a result, key investments were made; the upgrade of Maputo International Airport, completion of the Armando Emilio Guebuza Bridge to link the south and centre with the north, implementation of a US\$506 million infrastructure project in four provinces (Nampula, Cabo Delgado, Niassa and Zambezia), and completion of the Vanduzi-Changara road to improve links between Manica and Tete provinces.

Despite the numerous challenges facing Mozambique, there are substantial opportunities for economic growth including vast stretches of underutilised fertile land, a long coastline with opportunities for mineral resource extraction, fisheries, tourism and trade. The country's geographic location offers three vital transport corridors and strategic ports essential for neighbouring landlocked countries (Malawi, Swaziland and Zimbabwe). However as the global financial crisis undercut demand and credit, some of the major mining projects were delayed or postponed, among them Titanium Corridor Sands, and coal exports from Chibuto and Moatize.

### 2.5.2 Macro-economic situation and outlook

Mozambique is a Least Developed Country (LDC) with a GDP of about US\$428/capita in 2009 (up from \$220 in 2002). At independence in 1975 Mozambique was amongst the world's poorest countries in per-capita GDP terms. Mismanagement, corruption and the civil war from 1977-92 exacerbated the situation. In 1987, the state embarked on a series of economic reforms designed to stabilize its economy. The centrally planned state controlled economy is transforming into a market-oriented one, whilst seeking to maintain its pro-poor budget policies.

Despite extensive flooding in late 2007 and the large import price increases (food and oil), Mozambique continued to enjoy a sustained period of high real GDP growth. From a higher growth rate of 8.5% in 2006, in 2007 there was a slight slowing of growth to 7.3%. However growth remained on average around 7% during the period 2006 to mid-2008. In 2009, GDP growth slowed to 5.4%, reflecting a fall in private capital flows, remittances and foreign aid coupled with an unfavourable external trade position<sup>3</sup>.

Inflation rates were reduced to single digits during the late 1990s, and although it returned to double digits in 2000-06; in 2007 inflation rate was 8%. However, the rising costs of living (especially food and transport costs) led to violent street riots by the urban poor in early September 2010. This prompted the authorities to adopt emergency relief measures (e.g. a bread subsidy) to restore stability. In the light of these events and the results of the recent

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<sup>3</sup> Source: Mozambique Key Development Indicators: UN Mozambique: 2008

<http://mz.one.un.org/eng/About-Mozambique/Mozambique-Key-Development-Indicators>

household survey that indicated lack of progress in reducing poverty, Government also decided to use the drafting of the new poverty reduction strategy to assess options to make economic growth more inclusive and strengthen social safety nets.

The authorities have sustained prudent fiscal management. Fiscal policy has exceeded expectations despite the emergency spending related to climactic adversities. The Ratio of Fiscal Revenue/GDP has increased from 13.2% in 2006 to 14.4% in 2007. The ratio was forecast to reach approximately 15% of GDP in 2009. Mozambique's once substantial foreign public debt has been reduced through relief and rescheduling under the International Monetary Fund (IMF)'s Heavily Indebted Poor Countries (HIPC) and Enhanced HIPC initiatives, and is now at a manageable level. However, the economy remains highly dependent on overseas development assistance, which accounted for 21.6% of Gross National Income in 2009.

The 2009 current account showed an estimated deficit equal to 14.2% of GDP, up from 12.2% in 2008, but it is projected to narrow to 12.3% in 2010 and to 9.5% in 2011, although recent rises in oil prices will not help the position. There is some downside risk to remittance transfers due to the downturn in South Africa's mining sector. On the financial account, FDI could also suffer due to the adverse global financial climate.

### 2.5.3 External trade

Mozambique's international trade has traditionally been based on agricultural and food products (notably shrimp, tobacco and sugar). In recent years, Mozambique's current account has benefited from strong export growth, notably in minerals (particularly aluminium), gaining benefits, as commodity prices boomed, with the extractive industries accounting for two-thirds of shipments overseas. Since 1999, when Mozal, the large BHP-Billiton aluminium smelter, started operation, on the outskirts of Maputo, Mozambique's exports of goods have more than trebled. Aluminium now represents approximately 60-70% of manufacturing exports. The EU is currently the main market for Mozambican exports - mainly because European countries (principally brokers in Netherlands) are the main buyers of the aluminium ingots produced.

Three large capital enterprises dominate exports; they are Cahora Bassa electricity, the Mozal aluminium smelter, and the SASOL natural gas pipeline. The geographic position of the country in relation to neighbouring landlocked countries and regions has also historically made transport services - roads, railways, ports, shipment and transshipment - a central element of the economy and a significant foreign exchange earner. The Cahora Bassa Hydroelectric Dam, which has a capacity of 1,909 megawatts a year, is servicing a current annual national consumption of around 200 megawatts with the excess electricity is exported to Malawi, South Africa, Swaziland and Zimbabwe. Table 1 shows a detailed breakdown of the structure of the main exported commodities in 2007 to 2009.

Table 1: Main export commodities 2007 to 2009

4-digit heading of Harmonized System 2002	Value in Million US\$		
	2007	2008	2009
Unwrought aluminium	1,515.9	1,451.8	-
Commodities not specified according to kind	17.7	199.0	867.7
Electrical energy	225.3	226.4	274.4
Un-manufactured tobacco: tobacco refuse	50.5	193.0	179.3
Petroleum gases and other gaseous hydrocarbons	110.9	4.5	90.2
Crustaceans, whether in shell or not	65.8	68.7	60.3
Cane or beet sugar and pure sucrose, in solid form	59.0	0.0	58.3
Other oilseeds and oleaginous fruits	19.8	37.1	45.3
Petroleum oils, other than crude	35.6	56.0	8.8
Cotton, not carded, carded or combed	19.6	50.4	26.5
Total Commodities	2,412.1	2,653.3	2,147.2

Source: UN Comtrade

Exports have shown several years of continuous growth to around US\$2.7 billion in 2008. Exports of aluminium in 2009 are not included in the above table, but most other commodities continued to show strong increases. However, imports also grew substantially resulting in a widening trade deficit of US\$1.7 billion in 2009, compared to US\$1.4 billion in 2008.

In 2009, imports were characterised by machinery and transport equipment which accounted for 29% of imports, whilst imports of mineral fuels, lubricants and related materials accounted for 15% of imported goods. Other major commodity groups include manufactured goods, food (particularly rice), live animals, beverages and tobacco. In 2009, imports were valued at US\$3.8 billion (a decline of 6.1% compared to 2008). The trade balance showed a deficit equal to 20.3% of GDP (up from 12% in 2008)<sup>4</sup>. Foreign reserves are reported to be running at some five months import coverage in 2011.

#### 2.5.4 Employment situation

According to the 1997 census data, the economically active population in Mozambique was about 5.9 million people, the majority of whom were self-employed workers (52%) and unpaid family workers (34%); Only 11% were employed, of whom 4% were in the public sector and 7% in the private sector. The largest share of income in the country is concentrated in agriculture, forestry and fisheries (81% of the total workforce).

In 2005, the rate of unemployment was calculated to 18.7% through the Labour Force Survey (IFTRAB) but it does not appear to reflect the reality of under-employment. Social surveys indicate that the real unemployment rate is closer to 30% to 50%<sup>5</sup>. With 300,000 school leavers joining the job market each year, youth unemployment is a major concern.

#### 2.5.5 Investment environment

According to the World Bank, Mozambique ranked 141st out of 178 countries (in 2008) for ease of doing business, making it a "high cost economy", compared to neighbouring countries

<sup>4</sup> Mozambique Trade Policy review, Report by the Secretariat, WTO, WT/TPR/S/209  
[www.wto.org/english/tratop\\_e/tpr\\_e/s209-02\\_e.doc](http://www.wto.org/english/tratop_e/tpr_e/s209-02_e.doc)

<sup>5</sup> Report on the Millennium Development Goals - Mozambique 2010 Ensuring Employment: Situation and Trends United Nations Development Programme Mozambique  
<http://www.undp.org.mz/en/MDGS-GOAL/Goal-1-Eradicate-Absolute-Poverty-and-Hunger/Ensuring-Employment-Situation-and-Trends>



also competing for foreign direct investment. Mozambique improved its business environment in 2009 as reflected in the 2010 Doing Business report where its ranking improved to 135 out of 183 countries reviewed. Reforms to starting a business largely explain this change. The main changes to Mozambique's investment regime are the adoption of a new Commercial Code, a consolidated Code of Fiscal Benefits, and a new Labour Law. Under a new framework, the procedures required to start a business have been reduced to 10, close to the average in Sub-Saharan Africa. The time taken to start a business was lowered to 26 days, compared to an average of 45.6 days in Sub-Saharan Africa. Most importantly, there is now no minimal capital requirement to set up a business. At the same time, labour hiring regulations were also relaxed.

However corruption remains an ongoing problem. In 2010 Mozambique scored 2.7 out 10 on the Transparency International's *Corruption Perceptions Index* (which ranks 178 countries by their perceived levels of corruption, as determined by expert assessments and opinion surveys). The Business Anti-Corruption Portal<sup>6</sup> states that "most observers agree that corruption is one of the main constraints for doing business in Mozambique". It also states that Public procurement is an area of business activity where foreign companies are very likely to encounter corruption. The police in general and traffic police in particular are ranked as the most dishonest institutions in Mozambique's public sector. Access to land is a major problem for companies in Mozambique, and applications related to land are often seen by public officials as opportunities to demand bribes.

Positive developments in recent years are the work of the Investment Promotion Centre (CPI) established as a one-stop shop for investors, and to work for improvements in the regulatory environment, increased efficiency and integrity of Mozambique's customs and tax administration. In addition in 2010, the first corruption case on ministerial level was concluded in Mozambique, with the former Transport Minister Antonio Munguambe was convicted of corruption and sentenced to 20 years imprisonment for aiding the embezzlement of state funds from the state airline LAM.

Despite the Government's efforts to improve the investment environment, investors in Mozambique still face many bureaucratic and infrastructural hurdles. For instance, restrictive licensing of activities, and inspections of premises, as well as the general level of taxation.

## 2.6 Poverty Reduction Strategy

The Poverty Reduction Strategy Paper was set out by the PARPA II (Action Plan For The Reduction of Absolute Poverty 2006-2009) with the objective of decreasing the incidence of poverty from 54% in 2003 to 45% in 2009 and to promote fast, sustainable and broad-based growth<sup>7</sup>. The Programme was a successor to PARPA I and shares the same priorities in the areas of human capital development through education and health, improved governance, development of basic infrastructures and agriculture, rural development, and better macroeconomic and financial management. PARPA II differs in that its priorities include greater integration of the national economy and an increase in productivity. In particular, it focuses attention on district-based development, creation of an environment favourable to growth of the nation's productive sector, improvement of the financial system, measures to help small and medium-size companies to flourish in the formal sector, and the development of both the internal revenue collection system and the methods of allocating budgeted funds.

PARPA II is implemented via a series of Five Year Plans, which are further broken down into annual Economic and Social Plans (PES) and represent the basis for sectoral and provincial strategic plans and for the annually updated Medium Term Fiscal Framework, which sets out

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<sup>6</sup> Business Anti-Corruption Portal: Snapshot of the Mozambique Country Profile: December 2010

<http://www.business-anti-corruption.com/country-profiles/sub-saharan-africa/mozambique/>

<sup>7</sup> PROGRAMA QUINQUENAL DO GOVERNO PARA 2010-2014: Maputo April 2010

[http://www.pap.org.mz/downloads/programa\\_quinquenal\\_do\\_Governo\\_2010\\_1014.pdf](http://www.pap.org.mz/downloads/programa_quinquenal_do_Governo_2010_1014.pdf)

the annual limits for the state budget. PARPA II Objectives have been carried forwards into the government's current five-year plan (2010-2014). Government's policies therefore focus on creating an environment conducive to strong private sector activity, which is expected to also help ensure that more and more segments of the population will benefit from economic development.

Specifically, the government has proposed measures within the current Five Year Plan which aim to boost economic development by:

- (i) maintaining macroeconomic stability;
- (ii) encouraging additional national and foreign direct investment in the natural resources export sector;
- (iii) significantly stepping up public investment in transport and electricity infrastructure, partly financed through non-concessional external borrowing and/or Public-Private Partnerships (PPP);
- (iv) improving the business climate; and
- (v) reaping benefits from regional integration. In all these efforts, the government will closely cooperate with the domestic private sector and tap expertise from development partners.

## 2.7 State Budget

The evaluation of the General State Budget is show in Table 2: Government expenditure has risen from just over EUR 2 billion in 2007 to EUR2.6 billion in 2010. The main feature is the significant budget deficit, running at 50-55% since 2007.

**Table 2: Evolution of General State Budget of Mozambique 2007-2010**

Item	Annual budget (EUR)			
	2007	2008	2009	2010
Receipts	921.689	1.096.031	1.214.821	1.282.020
Expenditures	2.013.011	2.513.134	2.579.716	2.633.543
Deficit	1.091.322	1.417.103	1.364.896	1.351.523
Deficit (%)	54%	56%	53%	51%

Source: Orçamento Geral do Estado, Direcção Nacional de Orçamento  
<http://www.dno.gov.mz/docs.html>

The shortfall in government expenditure compared to income is made up by credit (external and internal) which account for about 45% of the deficit and donor support (both project and budgetary support) which accounts for 55% of the deficit, as shown in Table 3. The budgetary analysis demonstrates the high level of dependence of the Mozambique State on the international donor and financial community.



**Table 3: Mozambique budgetary income by source, 2010**

		EUR* (x 1,000)	Basis
1	<b>Internal income</b>	<b>1,472,403</b>	2+8
2	Total receipts (current plus capital)	<b>1,282,020</b>	3+7
3	Current receipts	<b>1,253,625</b>	4+5+6
4	- <i>Fiscal receipts</i>	<b>1,056,095</b>	
5	- <i>Non-Fiscal receipts</i>	<b>102,467</b>	
6	- <i>Consigned receipts</i>	<b>95,063</b>	
7	Capital inflows	<b>28,395</b>	
8	Internal credit	<b>190,383</b>	
9	<b>External income</b>	<b>1,161,140</b>	10+11
10	- <i>Donors</i>	<b>753,963</b>	
11	- <i>Credit</i>	<b>407,177</b>	
	<b>Total</b>	<b>2,754,423</b>	1+9

\* Exchange Rates 1 Euro = MTS 44.80

Source: Orçamento Geral do Estado, Direcção Nacional de Orçamento  
<http://www.dno.gov.mz/docs.html>

## 2.8 Membership of regional organisations

### 2.8.1 African Union

Mozambique is a founding member of the African Union (AU), the successor to the Organization of African Unity (OAU). The aim for the AU is to form an economic and monetary union with institutions including: the Conference of Heads of State and Government, the Council of Ministers, the Peace and Security Council, the Commission of the Union, the Pan-African Parliament, together with a Central Bank, a Monetary Fund, an African Investment Bank, a Court of Justice, an Economic, Social and Cultural Council, and several technical committees.

The African Economic Community (AEC) was founded in June 1991 under the auspices of the OAU, now the AU, under the terms of the Treaty of Abuja. This treaty provides for the creation of an African common market in six stages over 34 years. The integration process is based on the coordination and harmonization of tariff and non-tariff measures between various trade and sub-regional groups (Regional Economic Communities or RECs), with a view to establishing a continent-wide customs union. Mozambique belongs to the Southern African Development Community, one of the seven RECs recognized by the African Union.

The New Partnership for Africa's Development (NEPAD), an AU initiative launched at the Lusaka (Zambia) Summit in 2001 is aimed, inter alia, at developing the appropriate infrastructure to support the process of regional integration and at improving governance. As a result, in 2004 Mozambique joined NEPAD's African Peer Review Mechanism (APRM) a self-monitoring mechanism adopted in 2003; Mozambique has yet to submit its first review.

### 2.8.2 Southern African Development Community (SADC)

Mozambique is a founding member of the SADC, which was established in 1992. SADC is a regional political and economic cooperation organisation which comprises 15 member States all in the Southern and Central African region.

The objectives of SADC are to promote economic development, peace, and security for the people of Southern Africa, through regional integration and the development of complementary national and regional strategies and programmes. The member states have emphasized that all of SADC's activities and programmes must address poverty alleviation and that HIV/AIDS must be accorded priority, as a major threat to the attainment of SADC's

objectives. The institutional framework of the SADC comprises the Conference of Heads of State and Government, the Council of Ministers, the SADC, and the Organ on Politics, Defence and Security (OPDS). The SADC Secretariat (located in Gabarone, Botswana), supports the Standing Committee of Officials, which reports to the Council of Ministers.

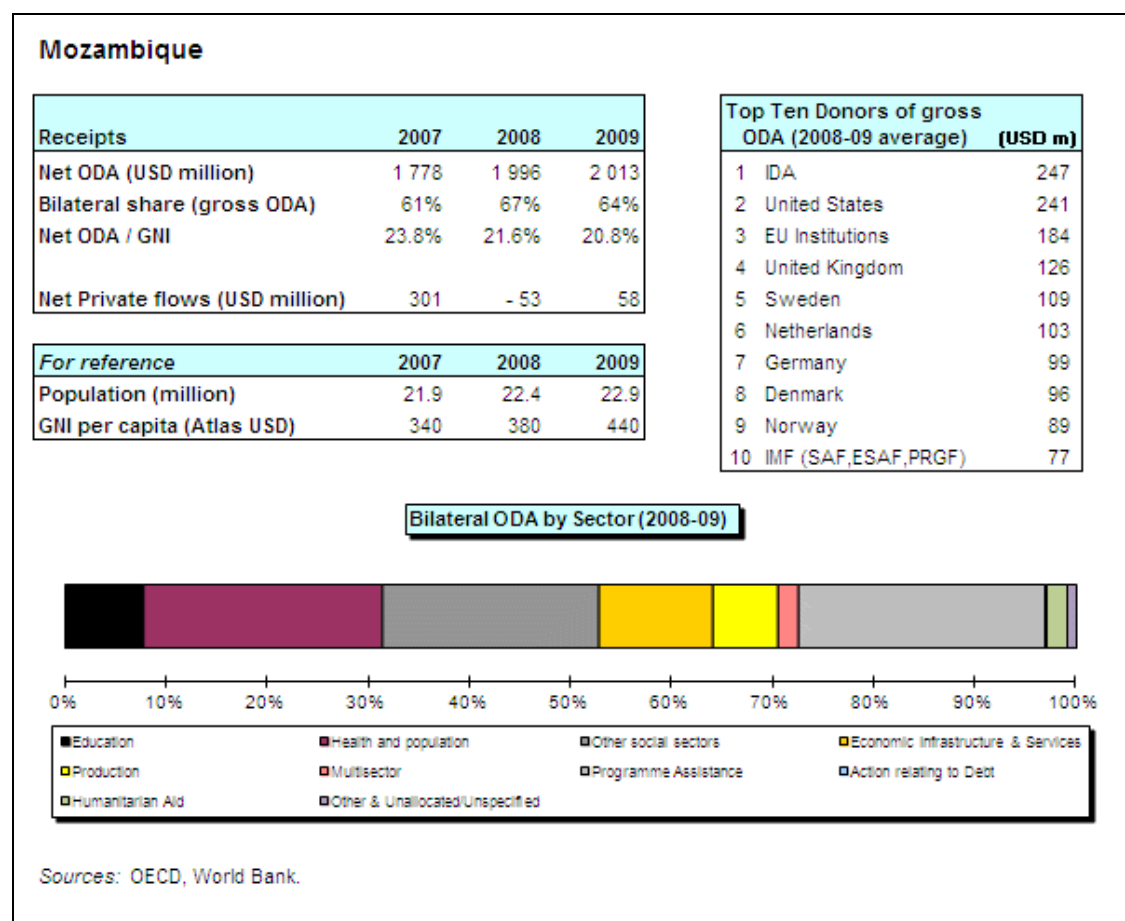
Regional economic integration objectives include the establishment of a free-trade area by 2008, a customs union by 2010, a common market by 2015 and a monetary union by 2016. The SADC free-trade area was established at the start of 2008 pursuant to the Protocol on Trade, as amended; it was notified to the WTO under Article XXIV of the GATT 1994, and adopted by Members at the meeting of the Committee on Regional Trade Agreements (CRTA) on 15-16 May 2007.

The objectives of the Protocol on Trade include: the implementation of a tariff reduction schedules; the harmonization of customs rules and procedures; the adoption of international standards; the harmonization of sanitary and phytosanitary measures; the elimination of non-tariff barriers; and the liberalization of trade in services. Sugar is not included in the free-trade regime and is the subject of special treatment.

## **2.9 Relations with International Donors**

The high level of budgetary dependence on donor interventions results in a substantial and complex donor matrix of measures, combining a range of budgetary support programmes and project-based grant funded interventions, along with loan-financed investment project delivered by multi-lateral financial institutions (AfDB, World Bank, EIB etc). The overall picture is shown in Figure 1. Net development assistance rose from US\$1.8 billion in 2007 to 2.0 billion in 2009, but its share of Gross National Income has fallen from 24% to 21% over the same period. The IDA and the EU are the largest multilateral donors, and the USA, UK, Sweden and Netherlands the largest bilateral donors. Overall nineteen donors have committed to supporting the Government's poverty reduction strategy, the PARPA (*Plano de Acção para a Redução da Pobreza Absoluta*) and health, education and social sectors accounted for about 53% of the total expenditure in 2008/2009.

To improve donor coordination the Member States of the European Union which are active in Mozambique, together with the European Commission, agreed in 2008 on implementing the EU Code of Conduct on Division of Labour in Development Policy. This included the definition of 10 sectors, and an agreement that each donor should focus their initiatives on three sectors with a possibility to also remain active in so called non-focal sectors. As a result, EU Member States started to focus their interventions by withdrawing from some sectors or using silent partnerships or delegated cooperation, based on their comparative advantage.



**Figure 1: Donor matrix for Mozambique 2007-2009**

Due to the favourable context for budget support in Mozambique, a steadily increasing number of donors make use of this approach. General Budget Support (GBS) has been constantly rising since it started in 2000 with US\$30 million. In 2009, general budget support was US\$485 million (i.e. about 23% of all ODA). In addition budget support to defined sectors is equally widespread in Mozambique although no specific data is available. A summary of budgeting support by donor in 2009 is shown in Table 4.

In 2003-04 the need for improved donor coordination with regard to budget support led to the development of a Memorandum of Understanding (MoU) for Programme Aid (Direct Budget Support). The MoU was signed by 13 bilateral donors, the European Commission and World Bank (together known as Programme Aid Partners or PAPs). The MoU includes a common Performance Assessment Framework (PAF) in which GoM identifies its priorities and jointly with PAPs assesses performance on an annual basis. The MoU defines commitments to improving the quality of development cooperation and provision of Programme Aid that imply certain changes in the PAP-government relationship. For donors, this requires the following steps<sup>8</sup>:

<sup>8</sup> Programme Aid and Partnership: Programa Quinquenal Do Governo Para 2010-2014: Maputo April 2010  
<http://www.pap.org.mz/>

- Need to align budget support with government's instruments, processes and systems of financial management, shifting accountability from donors to the Mozambican citizens through the National Assembly
- More strategic, on-going dialogue with GoM on those instruments and systems
- Need to discuss and form a joint view on the range of government policy and performance, including sector and cross-cutting issues related work
- Commitment to greater transparency, predictability and harmonisation
- Commitment to reduce administrative burden

**Table 4: General budgetary support for Mozambique by donor, 2009**

PAP's commitments for 2009 (*)			
Donor	Donors currency	Original commitment in donors' currency	Adjusted value in US\$
Germany	EUR	15,000,000	23,310,000
Austria	EUR	3,200,000	4,972,800
ADB	BUA	20,000,000	30,480,000
World Bank	US\$	80,000,000	80,000,000
Belgium	EUR	3,000,000	4,662,000
Canada	CAD	7,500,000	7,570,500
European Commission	EUR	47,000,000	73,038,000
Denmark	DKK	50,000,000	10,500,000
Spain	EUR	7,000,000	10,878,000
Finland	EUR	7,000,000	10,878,000
France	EUR	2,000,000	3,108,000
Netherlands	EUR	18,000,000	27,972,000
Ireland	EUR	11,500,000	17,871,000
Italy	EUR	3,800,000	5,905,200
Norway	NOK	160,000,000	31,856,000
Portugal	US\$	1,500,000	1,500,000
United Kingdom	GBP	42,000,000	83,092,800
Sweden	SEK	330,000,000	55,308,000
Switzerland	CHF	7,500,000	7,237,500
Total			485,167,000

(\*) Exchange rates; EUR1 = US\$ 1.554; DKK1 = US\$ 0.210; NOK 1 = US\$ 1.991; GBP 1 = US\$ 1.9784

Source: Programme Aid Partnership, 2010

These changes in turn imply the need for a clearer organisational structure among PAPs, and for terms of reference which define the different levels of PAPs' work and roles and responsibilities for dialogue with the government and amongst PAPs. This will include sectors and cross-cutting issues related groups. A new updated MoU was signed between the

partners in March 2009<sup>9</sup>. Aiming to be part of the high level GBS dialogue mechanism, the UN and the US have also signed the GBS Memorandum of Understanding becoming associated members, even though they are not channelling their funds via General Budget Support.

## 2.10 Relations with the EU

### 2.10.1 Tariffs and trade

Mozambique is a signatory to the Cotonou Agreement between the European Communities (EC) and 78 African Caribbean and Pacific (ACP) states, which entered into force in April 2003. The trade provisions comprise one of the mechanisms for cooperation between the ACP countries and the EC, whereby the latter grants duty-free admission for non-agricultural products and the majority of processed agricultural products originating in ACP countries (excluding South Africa) on a non-reciprocal basis. Since 2004, Mozambique has also benefited from the preferences granted under the Sugar Protocol.

A WTO waiver was applied to the unilateral trade provisions in EU-ACP trade relations until 31 December 2007. The Cotonou Agreement provides for bilateral economic partnership agreements (EPAs) between the EC and various ACP regional groupings; Mozambique belongs to the SADC group and in June 2009 joined Lesotho, Swaziland and Botswana in the signature of the EU-Southern African Development Community SADC Interim Economic Partnership Agreement. The EPA ensures continued preferential access to the EU market for exports from Mozambique, Namibia's signature is pending. A key achievement of these negotiations has been to preserve preferential trade agreements by keeping them consistent with WTO rules.

The main features of the Economic Partnership Agreement are:

- no duties/quotas for SADC imports to the EU.
- no duties/quotas for 86% of EU exports to Botswana, Lesotho, Namibia and Swaziland (excluding sensitive sectors for local producers, e.g. agricultural goods and textiles). Liberalisation to take place over 4 years or by 2015 at the latest. This brings the situation into line with the separate trade and cooperation agreement between South Africa and the EU.
- no duties or quotas for 81% of EU exports to Mozambique (excluding sensitive sectors for local producers, e.g. farm goods and textiles). Liberalisation will take place gradually by 2023.
- the possibility for all participating countries to re-introduce duties/quotas to help safeguard local economies
- EU commitments to foster trade within the region and help exporters meet EU import standards (see examples of trade facilitation)
- commitment of all interim EPA partners except Namibia to conclude an EPA covering services and investments
- clauses for Angola and South Africa to join the agreement

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<sup>9</sup> Eva Kohl, Gertrude Leibrecht, Irene Novotny, Manfred Schnitzer: Austrian Development Cooperation Mozambique Country Strategy 2010–2013  
[http://www.entwicklung.at/uploads/media/Country\\_Strategy\\_Mozambique\\_2010-2013\\_04.pdf](http://www.entwicklung.at/uploads/media/Country_Strategy_Mozambique_2010-2013_04.pdf)

Based on the interim agreement, the signatories will continue negotiations for a definitive EPA, which will cover not only trade in commodities, but the more delicate and so far unsolved questions of investment, competition and trade in services.

In December, the Mozambican parliament, the Assembly of the Republic, approved a new customs tariff list, taking effect this year, which paved the way for the implementation of the interim EPA by removing import duties from most imports from the EU. Mozambique has until 2023 to liberalise the rest of its trade with the EU. Mozambique, as a LDC, is also eligible for the "Everything but Arms" (EBA) initiative. However, Mozambique uses only the preferences granted under the Cotonou Agreement, whose rules of origin are considered more favourable. The principal export concerned is aluminium.

Angola and South Africa did not join this interim agreement but are negotiating a broader regional agreement. Angola has not yet presented a tariff offer, but maintains market access through the EU's "Everything but Arms" initiative for least developed countries. South Africa has a separate trade and development agreement with the EU, the TDCA.

The EC provides duty-free and quota-free access for all products originating in Mozambique, with the exception of rice and sugar. Mozambique exports sugar to the EC under three types of preferential quota, under the Sugar Protocol of the ACP-EC Agreement, the special preferential sugar regime (SPS), and the EBA initiative (Chapter IV(2)(iii)). The EPA foresees the continued implementation of the Sugar Protocol until 30 September 2009, followed by a transition period until 30 September 2015.

## 2.10.2 National Indicative Programme (NIP)

The National Indicative Programme sets out the development cooperation strategy under the 10th EDF and was adopted by the parties for the period 2008 to 2013<sup>10</sup>. The programmable resources of the NIP amount to EUR 622 million. The EC-Mozambique Country Strategy Paper and NIP for 2008-2013 was signed in Lisbon in December 2007. The strategy chosen for EDF cooperation in Mozambique is to help to achieve the twofold objectives of PARPA II (Action Plan for The Reduction of Absolute Poverty 2006-2009) i.e. to decrease the incidence of poverty from 54% in 2003 to 45% in 2009 and to promote fast, sustainable and broad-based growth.

The EDF envelope covers long-term programmable development operations under the strategy, and in particular provides for:

- a) General budget support: 46%-50% of the total amount;
- b) Transport infrastructure and regional economic integration : around 21% of the total, in the form of sector budget support and projects;
- c) Agriculture, rural development and regional economic integration: 12%-15% of the total, in the form of sector budget support and programmes;
- d) Other programmes: 14% of the total, in the form of sector budget support, SWAP programmes and projects, plus 3% for participation in the PALOP countries initiatives:

Apart from general budget support measures, two focal sectors have been selected. About 21% of the A envelope is to be allocated to transport infrastructure and regional economic integration, including rehabilitation to facilitate social and economic activity, encompassing support for road maintenance and rehabilitation, rural roads, institutional support and capacity-building, along with capital investment supporting regional integration. About 12% to 15% is to be allocated to agriculture, rural development and regional economic integration to

<sup>10</sup> Republic of Mozambique and the European Community Country Strategy Paper and National Indicative Programme for the period 2008 - 2013

[http://ec.europa.eu/development/icenter/repository/scanned\\_mz\\_csp10\\_en.pdf](http://ec.europa.eu/development/icenter/repository/scanned_mz_csp10_en.pdf)

promote sustainable economic growth in rural areas, enhance food security and promote trade flows.

### 2.10.3 Regional Indicative Programme

The EU-Africa summit, held in December 2007 in Lisbon cemented new Africa-EU strategic partnership, marking a qualitative leap in relations between the two continents. Within this partnership its first action plan specifies concrete proposals for 2008-2010 structured along 8 Africa-EU strategic partnerships:

- Peace and security
- Democratic governance and human rights
- Trade, regional integration and infrastructure
- Millennium development goals (MDGs)
- Energy
- Climate change
- Migration, mobility and employment
- Science, information society and space.

Together with the political Lisbon Declaration these axes guide EU-Africa dialogue and cooperation in the coming few years in line with the principles of African ownership, co-management and co-responsibility.

Note that one of the main stated objectives of the EU relations with Africa is to promote the achievement of the UN MDGs in Africa. This objective is strengthened and complemented by the specific objectives pursued within the Cotonou Agreement, the Trade Development and Cooperation Agreement (TDCA), the Euro-Mediterranean partnership and the European neighbourhood policy including the support to political reform and economic modernisation.

Mozambique is therefore a beneficiary of interventions supported under the 10<sup>th</sup> EDF Regional Indicative Programme (2008-2013) for Southern African Region represented by SADC. The priorities are set out in the Regional Strategy Paper and the Regional Indicative Programme, with an allocated financial envelope of EUR116 million. The indicative allocation has been distributed as follows:

- Focal Area 1: Regional Economic Integration: approximately 80% of the total allocation;
- Focal Area 2: Regional Political Cooperation: approximately 15% of the total allocation;
- Other programmes: approximately 5% of the total allocation.

In addition, activities initiated under the first focal sector, in particular the preparation of energy, water, ICT and transport projects, are eligible for consideration under the arrangements envisaged for the EU-Africa Partnership on Infrastructure

The largest focal sector – in financial terms – is Regional Economic Integration. This provides broad-based support to deepen SADC economic integration and trade policies, including investment promotion, regional infrastructure and food security. This also provides the EDF contribution to the EU package on Aid for Trade, in particular for the EU-SADC EPA. Focal Area 1 is expected to result in increased intra- and extra-regional trade, through harmonised regional trade policies, the removal of supply-side constraints and the easing of budgetary constraints on further trade liberalisation.

Activities supported involve trade integration, through the full implementation of the SADC Trade Protocol (including continuation of the support provided in a number of trade related areas under the 9th EDF), and of the Finance and Investment Protocol, as well as some wider key economic integration issues. The major interventions planned are as follows:

- Trade Integration
- Support to structural reforms in SADC
- Infrastructure Development
- Food Security Policy and Information Management
- Capacity development

The second focal area (Regional Political Cooperation) is intended to accelerate the “*regional integration process by supporting democratic governance and the regional pillar of the pan African architecture of peace and security*”. It supports capacity building in the context of regional governance and the implementation of some aspects of the Joint Africa-EU Strategy in the area of Peace and Security. Its interventions are in the fields of:

- Democratic Governance
- Regional pillar of pan African architecture of peace and security
- Disaster Management

Other Programmes (Non-Focal Sector) will cover a technical cooperation facility and support to non-state actors. Mozambique is a beneficiary of the activities under the non-focal sector support of two all-ACP projects; the Strengthening Fisheries Products Health Conditions programme (8<sup>th</sup> EDF) and the “Strengthening Fisheries Management in ACP countries” programme (9<sup>th</sup> EDF). More details of the activities of these interventions in Mozambique are provided in section 3.10.3.

#### 2.10.4 The European Investment Bank

The National Indicative Programme and the Country Strategy Document foresee that the EIB may contribute to the implementation of the programme through the financing of an investment facility and/or through its own resources within the rules of the 10<sup>th</sup> EDF under the ACP-EU partnership accords. The EU Infrastructure Trust Fund for Africa is a new co-financing instrument of the EU-Africa Partnership on Infrastructure. It brings together the resources of the EC, the Member States, the European Investment Bank (EIB) and European Development Financing Institutions in the creation of an Infrastructure Trust Fund<sup>11</sup>. This is able to provide grants for:

- interest rate subsidies
- technical assistance including preparatory work for eligible projects such as environmental impact assessments, project supervision and targeted capacity building
- direct grants for project components that have a substantial demonstrable social or environmental benefit
- initial stage funding of insurance premium necessary to ensure the launch of infrastructure projects.

Eligible investments are those in the energy, transport, water, IT and telecommunications sectors. The Trust has established a secretariat as an access point for and liaison with all Partnership stakeholders. EUR 5.6 billion has been allocated from the 10<sup>th</sup> European

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<sup>11</sup> Infrastructure Trust Fund European Union Africa: EU-Africa Infrastructure Trust Fund

<http://www.eu-africa-infrastructure-tf.net/>



Development Fund (2008-2013). The EIB is responsible for the management of the fund. The Trust Fund is particularly appropriate for the transport infrastructure needs of Mozambique. In April 2009 the EIB and the Government of Mozambique signed an agreement for a loan of EUR 65 million for the rehabilitation of the Beira corridor in Mozambique. The EIB loan will be complemented by a EUR 29 million interest rate subsidy from the EU-Africa Infrastructure Trust Fund. The funding package will support improvements to the Sena railway line and the restoration of the Beira port access channel.

The rehabilitation of the Beira corridor will restore efficient links to other countries in the region and facilitate international trade. By improving Mozambique's transport services by sea to international ports and by rail to the landlocked countries of southern Africa, the project is expected to catalyse local and regional economic growth and contribute to overall poverty alleviation.

## **3 FISHERIES IN MOZAMBIQUE**

### **3.1 Mozambique fishing zones**

#### **3.1.1 Marine and inland water resources**

The fisheries of Mozambique are conducted in two distinct zones; the coastal zones in which all artisanal fisheries are conducted, along with some important industrial and semi-industrial fisheries for shrimp and other mainly demersal resources. These fisheries are pursued by national entities. Secondly, Mozambique waters also host important fisheries for highly migratory fish species such as tunas and swordfishes, which are conducted in deeper waters to the extent of the EEZ. These fisheries are mostly pursued by foreign fishing operations. This section considers the coastal fisheries. The offshore fisheries are considered in the next section.

The maritime coast extends for about 2,700 km. Three distinct sections may be identified:

- The northern coast, about 770 km long, with a rocky and coral-bearing sea bed, and a narrow continental shelf, and sheltered islands and bays, covering Cabo Delgado province and the northern and central districts of Nampula province;
- The central coast, about 980 km long, facing the Sofala bank, split by the numerous rivers and channels fringed with mangrove forests that provide sheltered estuarine areas, and sandy coasts, sometimes protected by coastal islands, extending from the two most southerly districts of Nampula province to Govuro district, in Inhambane province; and
- The southern coast, about 950 km long, facing in its central area the deep water Boa Paz bank, extends from Govuro district, in Inhambane province, to the extreme south of Maputo province. It has beaches in some areas, with sea beds sown with coral and rocks, with some sheltered bays, exposed to strong southerly winds, particularly from Inhambane to the far south of the territory.

There are two important inland masses of water; Lake Niassa, shared with Tanzania and Malawi, and the Cahora Bassa dam lake. About twenty large rivers, with permanent flows discharge into the sea (the Zambezi stands out as one the largest.). There are a large number of coastal and inland lagoons, and flood plains, which provide fish for the local population on a seasonal basis.

#### **3.1.2 Limits of the EEZ**

The sovereignty of Mozambique over the 12 nautical miles Territorial Sea and 200 miles EEZ were both defined in 1976 in Law-Decree 31/76, using the straight baselines already promulgated by Portugal<sup>12</sup>. Subsequently Law 4/96 of 4 January 1996 approving the Act of

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<sup>12</sup> Limits of the Sea N° 29 “Straight Baselines: Mozambique”, 12.11.1970

Sea established the current legal framework for the administration of the sea and maritime activities along the coast, complementing previous legislation. Decree 18/01 from 3 July 2001 creates the National Institute of Sea and Borders (IMAF) under the Ministry of Foreign Affairs and Cooperation as an executive body for the coordination of activities over the sea and sea borders which is vested administrative and financial autonomy.

Article 4 of Law 4/96 defines the breadth of the territorial sea as 12 nautical miles measured from the baseline, and draws closing lines and straight baselines that supplement the normal baseline. The set of 28 points defined in the law create five straight baseline systems. In two cases islands and reefs are connected to the mainland and in three cases bay-like coastal indentations are closed. Only two of the segments deviate by more than 15° of the general direction of the coast. Article 5 establishes that where the Mozambican coast is adjacent to another country, in the absence of an agreement stating otherwise, the territorial sea is limited by the line which points are equidistant from the points that define the baselines of each of the countries. The EEZ extends up to a distance of 200 nautical miles from the baseline (Art 9). Whenever the Mozambican coast is adjacent or opposite to the coast of another state the limit of the EEZ is to be established by agreement, or in the absence of an agreement, by international law (Art 10).

The territorial sea of Mozambique is adjacent to the territorial sea of South Africa (south) and to the territorial sea of Tanzania (north). The EEZ of Mozambique borders with 4 countries. The countries are: Tanzania, Comoros, Madagascar, and South Africa. Mozambique signed a Maritime Boundary agreement with Tanzania in 1988 in Maputo<sup>13</sup> which entered into force in July 1993.

However, the delimitation of Mozambique's boundary with Tanzania is not complete. To be concluded, the involvement of the Comoros is required in order to establish the tri-point between the three countries (Mozambique, Madagascar and Comoros Islands). It appears that an attempt to establish the tri-point failed due to a disagreement with the Comoros on the use of the equity principle by Mozambique and Tanzania which was used to delimit their EEZ<sup>14</sup>.

In addition there are five islands in the Mozambique Channel under French administration five of which (Bassas da India, Europa, Juan da Nova, Mayotte and Glorieuses) are subject to unresolved territorial claims. Madagascar has claimed the French islands of Glorieuse, Europa Island, Bassas da India and Juan de Nova. The approximate delimitations of the current maritime zones of each territory are shown in Figure 2.

The lack of agreed sovereignty over these possessions prevents the establishment of the definitive Economic Exclusive Zone (EEZ) of Mozambique. As a result there are no agreed maritime borders established. The basis for the definition of maritime borders can be based on the UN Convention on the Law of the Sea (UNCLOS)<sup>15</sup> but the land territorial disputes will need to be resolved first.

Negotiations concerning the delimitation of EEZ borders in the area are further complicated by political issues such as the disputes between Comoros and France over the island of Mayotte, regarding Mayotte's decision in 1974 to cede from Comoros. A more thorough

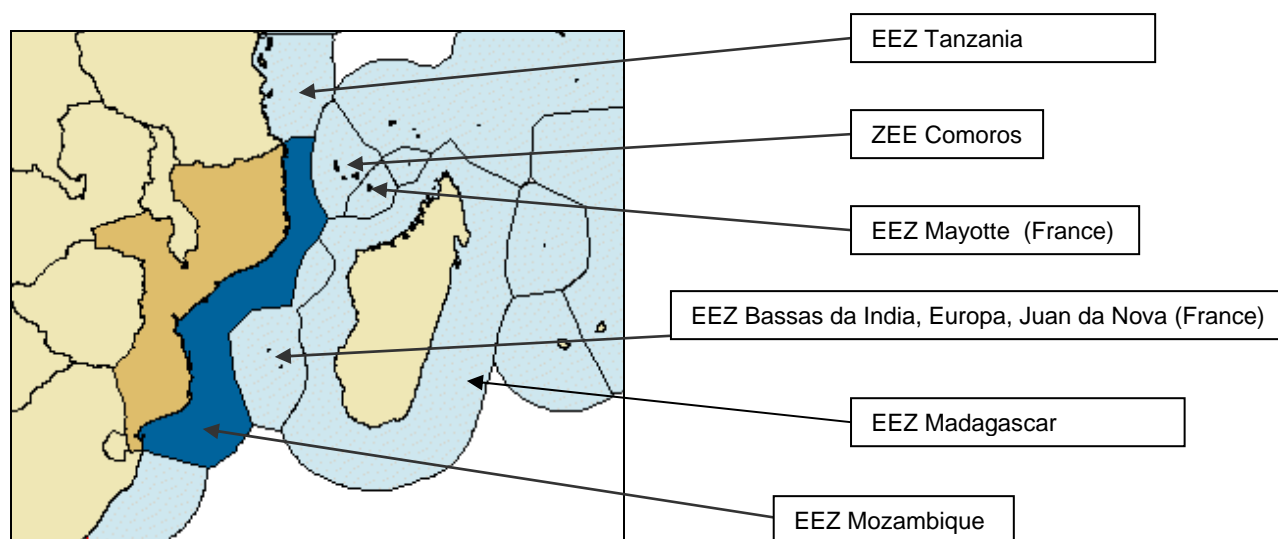
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<sup>13</sup> This agreement was ratified by the Peoples Assembly through Resolution No. 11/89 18 September 1989, Published in Official Journal No. 37, 1st Serial, 6° Supplement.

<sup>14</sup> "Maritime Boundaries Delimitation, Management and Dispute Resolution Delimitation of the Mozambique Maritime Boundaries With Neighbouring States (Including the Extended Continental Shelf) and the Management of Ocean Issues", Elísio Benedito Jamine, The United Nations and Nippon Fellowship Programme, 2006-2007, Division for Ocean Affairs and the Law of the Sea Office of Legal Affairs United Nations, NY, USA. See: [http://www.un.org/Depts/los/nippon/unnff\\_programme\\_home/fellows\\_pages/fellows\\_papers/jamine\\_0607\\_mozambique.pdf](http://www.un.org/Depts/los/nippon/unnff_programme_home/fellows_pages/fellows_papers/jamine_0607_mozambique.pdf)

<sup>15</sup> The agreements between Tanzania and Mozambique were entered into in July 1993 - see [www.dtic.mil.whs/directives/corres/20051m\\_040201/tanzaniafinal.doc](http://www.dtic.mil.whs/directives/corres/20051m_040201/tanzaniafinal.doc).

treatment of all of the issues is provided in the paper by Elísio Benedito Jamine, referenced previously.



Source: Sea around Us Project

**Figure 2: Schematic map of the EEZs in the Mozambique Channel area (showing approximate delimitations)**

### 3.1.3 Marine protected areas in Mozambique

There are two national parks, which include marine areas, the Bazaruto and Quirimbas National Parks. The Bazaruto Archipelago National Park covers an area of 1,430 km<sup>2</sup>, comprising the five islands and surrounding waters of the Bazaruto Archipelago, providing protection to the largest and only remaining viable population of dugongs in the western Indian Ocean; five species of sea turtles; coral reefs; whales, dolphins and other marine animals; plus several endemic terrestrial gastropods and lizards. It is also an important bird area, in particular hosting significant aggregations of Palaearctic migrant water birds. A revised management plan for the period 2008-2012 is in effect and includes the activities a few thousand artisanal fishermen. WWF supports the management of this park

The Quirimbas National Park (QNP), is also supported by the national branch of WWF in Mozambique in association with other government agencies. It covers a similar area of about 1,500 square km, including various islands and a population of about 60,000 artisanal fishermen. A management plan for the park has been produced and a number of park rangers have been trained by WWF to be responsible for managing the day-to-day activities of the park. The concept of co-management is included in the Park's management plan through the support of multi-sector management groups representing tourism, park administration, communities and NGOs.

In both cases, the parks are located almost entirely within the territorial waters and no interactions with the industrial tuna fleets are reported.

## 3.2 Fisheries resources

Mozambique is well endowed with fishery resources due to the oceanographic conditions and the eutrophication of coastal waters from several major river systems.

### 3.2.1 Marine fish species

Marine fish resources include important stocks of shallow-water shrimp predominantly white shrimp (*Penaeus indicus*) and brown shrimp (*Metapenaeus monoceros*), while other species are caught in much lesser quantities (*P. japonicus*, *P. latisulcatus*, and *P. monodon*). Deep-water (>200m) shrimp resources are also found, the main species are *Haliporoides triarthrus vnioi* (gamba rosa) and *Aristaeomorpha foliacea* (gamba vermelha), as well as other species

such as *Aristeus antennatus*, *Aristaeopsis edwardsiana*, and *Penaeopsis balssi*. There are also commercially important stocks of crayfish (langostino - *Metanephrops mozambicus*, *Nephropsis stewarti*), crab (*Chaceon macphersoni*), and deep-water lobster (*Palinurus delagoa*).

Small pelagic resources include anchovy (*Engraulidae*, *Stylephorus spp*), barracuda (*Sphyræna spp*), driftfish (*Ariomma spp*), jack mackerels (*Alepes spp*, *Carangoides spp*, *Caranx spp*), mackerels (*Rastrelliger spp*, *Scomber spp*), ponyfish (*Leiognathidae*), sardines (*Sardinella spp*, *Dussumieria spp*, *Etrumeus*, *Hilsa keele*), and scads (*Decapterus spp*, *Trachurus spp*). These small pelagic fish are mainly confined to the shelf area at depths less than 200m.

On the continental shelf, the dominant demersal species are snappers (*Lutjanidae*), goatfish (*Mullidae*), threadfins (*Nemipteridae*), grunts (*Pomadasyidae*), croakers (*Sciaenidae*), and lizard fish (*Synodontidae*). These coastal species are also the dominant species caught by artisanal fisheries such as small pelagics (e.g. *Engraulidae*, *Clupeidae*, *Carangidae*), demersals (*Sciaenidae*, *Mullidae*, *Haemulidae*, *Lethrinidae*, *Lutjanidae*, *Ariidae*), demersal sharks, and occasionally billfish (*Istiophoridae*).

The dominant species observed in deeper waters are smelts (*Argentinidae*), flounders (*Bothidae*), snake mackerel (*Gempylidae*), trumpet fish (*Macrorhamphosidae*), rat tail (*Macrouridae*), crocodile fish (*Peristediidae*), spiny shark (*Squalidae*), lizard fish (*Synodontidae*), and gurnard (*Triglidae*). There is also a wide variety of demersal sharks and rays, but the information concerning species identification is limited. Information on cephalopods is also limited, but there appear to be a wide variety of clams and bivalves as well as the more common families of octopus, cuttlefish and squid are presumed to be common.

Mesopelagic species (*Benthoosema spp*, *Hygophum spp*, *Myctophum spp*, *Symbolophorus spp*, *Daiphys spp*, *Maurolicus spp*) appear also to be abundant in Mozambican waters at depths below 500m. These are currently unexploited resources, but a commercial exploitation would be difficult with current technology.

In terms of the larger pelagic oceanic resources found in the EEZ, the more abundant tuna species are skipjack (*Katsuwonus pelamis*), yellowfin (*Thunnus albacares*), bigeye (*Thunnus obesus*), and albacore tuna (*Thunnus alalunga*). Dominant billfish species appear to be swordfish (*Xiphias gladius*), black marlin (*Makaira indica*), and Indo-Pacific blue marlin (*Makaira mazara*). Other tuna related species that are known to be common are Spanish mackerel (*Scomberomorus commersoni*), kawakawa (*Euthynnus affinis*), bonito (*Sarda orinetalis*), wahoo (*Acanthocybium solandri*), and other seerfish (*S. guttatus*, *S. maculatus*, *S. lineolatus*) as well as other associated species such as rainbow runner and dolphinfish (*Elagatis bipinnulata* and *Coryphaena hippurus*, respectively).

Surface longline fisheries target increasingly specific pelagic shark species such as blue shark (*Prionace glauca*) and shortfin mako (*Isurus oxyrinchus*), which are commercially important species. Other shark species known to be common are thresher shark (*Alopias vulpinus*), and various requiem sharks (*Carcharinidae*; *C. limbatus*, *C. longimanus*, *C. melanopterus*, *C. albigmarginatus*, *C. leucas*, *C. brevipinna*).

### 3.2.2 Inland fish species

Inland fisheries are present in all inland waters such as rivers, small lakes, flood plains, and the two major freshwater bodies Lake Niassa and the reservoir of Cahora Bassa. Inland fish resources are dominated by kapenta in Lake Cahora Bassa. Kapenta is also called the Tanganyika sardine, and is actually two species (*Limnothrissa miodon* and *Stolothrissa tanganicae*) both of which are small, planktivorous, pelagic, freshwater clupeid originating from Lake Tanganyika. They form the major biomass of pelagic fish, swimming in large schools in the open lake, feeding on copepods and potentially jellyfish. However, there are also a wide variety of demersal fish found in Lake Cahora Bassa and Lake Nyassa. The estimated fish catch in rivers and lakes is about 28,000 tonnes.

### 3.2.3 Fish stocks

The Fisheries Master Plan 2010-2019 presents a maximum potential in the range of 218,000 to 332,000 tonnes (lower than the 390,000 tonne estimate in the previous 1995 Master Plan). Some stocks are considered to be subject to excessive levels of exploitation (inshore shrimp,

lobsters, crabs, large pelagic fish, demersal stocks on the continental shelf) whilst others are subject to lighter levels of exploitation (deepwater shrimp and crabs, small pelagic fish, deepwater species). Formal stock assessment data is rather limited to a number of species, although the suggestion (and basis of the current Fisheries Master Plan) is that there is still scope for developing fisheries production in Mozambique.

According to the 2010-2019 Fisheries Master Plan the current estimates of annual production (including freshwater) are in the range of 115,000–124,000 which suggests that there is considerable unexploited potential which can be tapped.

### 3.3 Fishing fleets and employment

There are three main segments of the Mozambique fishery sector; artisanal, semi-industrial and industrial fisheries. Of the current production about 91% comes from artisanal fisheries, 2% from semi-industrial and 7% from industrial fisheries. However, in terms of value, the national industrial catch, consisting almost exclusively of crustaceans intended for export, represents slightly more than half the total value (about 52%) and artisanal fisheries not more than 42%, with the remaining 6% coming from semi-industrial fisheries.

#### 3.3.1 Artisanal fisheries

The 2007 census on marine artisanal fishing estimated that the number of fishers and others who depend directly or indirectly on artisanal fishing was in the region of 334,000 distributed across 1,217 fishing centres. Of these, 280,000 are artisanal fishermen, of whom 41% were using boats of various types, which 43% did not own or use any kind of boat. In addition to these fishermen, there are processors, artisanal naval carpenters, net-makers, naval mechanics and sellers of fishing gear and artefacts. The artisanal fishermen were using about 42,300 items of fishing gear, of which 18% were beach trawl nets, 23% hand lines and 42% surface gill nets. About 39,400 boats were used in artisanal fishing activities, of which about 77% were canoes made from tree trunks, 9% Moma type canoes, 6% rafts and 6% skiffs. The percentage of motorised boats had not increased significantly since the previous census in 2002 (3%). About 1,100 community based organisations were operating, covering 315 fishermen's associations, 353 savings and rotating credit groups and 415 other forms of community organisation.

As a result of the implementation of many integrated artisanal fisheries development programmes, almost 2,500 economic and social bodies have established linked to fishermen's communities, but these communities have significant shortcomings in terms of their social and economic capacity. Artisanal fishing remains of great importance in the country's food security, not only in the coastal districts, where two thirds of the country's population lives, but also in the interior regions, where, fresh, dried or smoked fish makes an important contribution to the diet.

In most regions inland fishing is undertaken by artisanal beach seining, seining (*chirimila*), traps and line fishing in Lake Niassa, gill nets, traps and line fishing in the reservoir of Cahora Bassa and line fishing, traps and gill nets in the rivers and flood plains. The catch is almost exclusively geared towards local consumption, i.e. national markets, with the exception of freshwater Kapenta fishing in Cahora Bassa which is dried and traded within the region.

#### 3.3.2 Semi industrial fisheries

In 2007 a fleet of about 100 vessels was involved in marine semi-industrial fisheries (defined as larger vessels without freezing capacity onboard). These operated mostly in shallow water shrimp fisheries Sofala bank, Maputo Bay, Limpopo River and Angoche region. A small number (8 vessels) also undertook line fishing on coastal rocky beds.

The southern Sofala shrimp trawling fishery occupies the area demarcated by the parallels of Machaze (19° 47' South), north of Beira, and that of the mouth of the Save river (21° South) and the meridian 35° 11' East, where the operation of industrial vessels is forbidden. The fishery is subject to a closed period of 2-3 months. Its target species are *penaeid* shrimp. The catches of this fishery are all processed on shore, and the end product is both sold locally and exported (to EU and South Africa). The significant by-catch is retained and later processed in salt or by drying in artisanal fishing centres along the coast, notably at Chiloane.

The Maputo Bay and Limpopo mouth prawn trawling fisheries take place in these zones up to a distance of 20 nautical miles from the coast. They are both subject to closed periods identical to that for the southern Sofala fishery and the areas are banned to industrial trawlers. The fisheries are subject to control over the fishing effort, not only through the number of boats but also through their technical characteristics and the fishing regime. By-catch is sold fresh in Maputo city;

The Angoche shrimp trawling fishery extends between Angoche and the mouth of the Ligonha River. Apart from the closed season, no other specific management measure has been defined.

The line fishery extends along the entire coastal zone from parallel 21° to the far south, between the depths of 20 and 150 metres up to a distance of 30 nautical miles from the coast. The fishery is subject to a limitation on fishing effort with a maximum of 25 boats, but this maximum has never been reached in recent years. Its target species are essentially the same demersal fish as the industrial fishery. The catches have not exceeded 500 tonnes, and the catch is destined for export, regional or local markets.

In recent years, private sector investment in the semi-industrial fishery of Lake Malawi/Niassa Lake Cahora Bassa, has been attracted because of the high price of small pelagic fish (kapenta) in the regional market. The landings of kapenta in Mozambique from Lake Cahora Bassa are around 12,000 tonnes/year. The kapenta fishery provides raw material for small scale sun-drying firms, which serve regional export markets. Much of the production is exported to neighbouring countries, principally Zimbabwe and to some extent Malawi

### 3.3.3 Industrial fisheries

In 2007, the industrial fishing fleet had 123 vessels distributed among the shrimp trawling fisheries on the Sofala Bank, deep water shrimp trawling on the continental slope, and line fishing on rocky beds, involving an estimated number of at least 4,500 professionals.

The Sofala Bank shrimp trawling industrial fishery comprised 92 vessels in 2007. The vessels target *Panaeoides* shrimps, and there is a high bycatch (70-80%) and significant discarding of low value demersal species. Shrimp catches are around 6-7,000 tonnes, which are packed and frozen on board, and mostly exported, mainly to Europe and Japan, with an annual value of around US\$ 50-60 million. Two large international joint ventures with the Government of Mozambique as shareholder dominate this shrimp fishery. [DELETED] The vessels are under the beneficial ownership of the partner foreign fleet operator. Spain, as the EU Member State in which two of these three partners are based therefore represents a major European interest in the Mozambican fishery sector. However, the Spanish owned vessels do not operate with EU flags. The fishery is closed to new operators. It is subject to a closed period of 3 months, during which time several of the larger vessels transfer to the deepwater shrimp fishery.

The deep water shrimp (gamba) trawling fishery takes place on the continental slope at depths up to 600m. Up to 27 vessels were involved in 2007 (but most on a seasonal basis), but the exploitation is irregular due to the high cost of trawling at great depth and the financial sensitivity to variable catch rates. Catches are well below the estimated potential which is about 3,000 tonnes. The catches are processed and frozen on board, with some secondary processing on shore, and the product is exported to Europe and South Africa;

The line fishing industrial fishery extends along the entire coastal zone between the depths of 25 and 200 metres. Its target species are the demersal fish that inhabit rocky beds, notably bream, snappers, kingfish and *Carangidae*. Four vessels were involved in 2007, and catches have been around 300 tonnes in recent years. The fish undergo an initial gutting and icing onboard and most are then export in fresh form to South Africa, with some to Europe, with lower value products sold on the local market.

The deepwater lobster industrial fishery extends along the continental slope adjacent to the Boa Paz Bank, between Vilanculo in the south and Inhaca in the north, in depths of between 200 and 500 metres. In the second half of the 1990s, the fishery was abandoned due to over fishing, and the resource is still recovering.

### 3.3.4 Foreign fishing vessels

The tuna purse seine and long line industrial fisheries are undertaken by licensed foreign fleets, which operate in the EEZ outside the 12 nautical miles territorial limit. Purse seine fishing occurs mainly between parallels 10° and 20° South and long line fishing between 20° and 26° South, with particular intensity below 25° South. The peak period of fishing activities occurs between May and August. The fishery employs only foreign labour. The catches are frozen on board and landed in foreign ports (Seychelles, Mauritius and occasionally Mombasa in the case of purse seiners and Durban in the case of surface longliners).

In 2010, the level of fishing by foreign vessels was as shown in Table 5. According to information presented at the Joint Committee meeting on 16/17 September 2010, Mozambique stated that other than to the EU it had issued licences to 10 Japanese vessels, 11 purse seiners from Seychelles and 3 local long-liners.

**Table 5: Foreign fishing operations in Mozambique, 2009**

Fishery	Flag	No. licences permitted	No. drawn
Long line	EU	45	14
Purse seiner	EU	44	23
Long line	Japan Tuna	40	6
Long line	Industry Kims Pesca	3	3
Long line	Propescas	1	1
Purse seine	Othongel (non-EU)	12	12

Source Ministry of Fisheries, National Fisheries Administration, Impact of Piracy on the Indian Ocean, Presentation, Beira, 16-18 June 2010

## 3.4 Catches

Table 6 shows that total production from capture fisheries in 2007 was estimated at about 115,000 tonnes, of which 76% are from marine and 24% from inland fisheries. Of the marine fisheries, about 10% is derived from crustacean (mainly shrimp) and 60% from fishes. Given the lack of an effective statistical system in 2007, these data are likely to under-estimate artisanal production in particular. The system has since been upgraded and the new sampling and catch information system in the inland fisheries, and fish production statistics in future are expected to provide a more accurate picture.

**Table 6: Estimated fish production in Mozambique (2007)**

<b>Fishery/species</b>	<b>Estimated Catches (tonnes)</b>
Shallow water <i>Penaeid</i> shrimp	7,469
<i>Sergiestidae</i> shrimp	2,444
Mangrove crab	247
Deepwater lobster	4
Deewater shrimp ( <i>Aristeidae/Solenoceridae</i> )	1,432
Langoustine	100
Deepwater crab	73
Total crustacea	11,769
Marine fish	
Large pelagics	6,586
Small pelagics	56,000 <sup>1</sup>
Demersals (artisanal fishery)	10,221
Demersals (semi & industrial fishery)	648
Total marine fish	73,437 <sup>2</sup>
Molluscs and other marine resources	
Coastal cephalopods	773
Clams and bivalves	1,000
Total other resources	1,773
Freshwater fish	
Kapenta (Cahora Bassa)	12,000
Other fish (cahara Bassa)	12,000
Utaka (Lake Niassa)	1,000
Ussipa Lake Niassa)	2,000
Other fish (Lake Niassa)	800
Total freshwater	27,800
<b>TOTAL</b>	<b>114,779</b>

<sup>1</sup> up to 65,000<sup>2</sup> up to 82,347

### 3.5 Fish processing

The export fish processing industry of Mozambique has upgraded significantly in recent years to meet EU sanitary requirements. The number of establishments approved for export to the European Union market has increased from five establishments (out of a total 20 exporters) in 2002 to 16 approved in 2006; the number has fallen to 12 in 2010 (due to consolidation). These include 2 storage facilities and 3 shrimp aquaculture processing plants. A complete list is shown in Table 7.



**Table 7: Approved processing establishments in Mozambique**

Name	City	Regions
Armazém Frigorífico da Crustamoz	Quelimane	Zambezia
Pescas do Sul	Maputo	Maputo
Prestige	Maputo	Maputo
Aquapesca, Lda	Quelimane	Zambezia
Complexo De Chiloane (Recanto De Chiloane)	Beira	Sofala
Prapesca	Beira	Sofala
Pescanorte	Angoche	Nampula
Sol & Mar (Sol & Mar Lda)	Beira	Sofala
Sol Marisco (Sol Marisco Lda)	Maputo	Maputo
Bazaruto Pescas	Beira	Sofala
Gelmar	Beira	Sofala
SPS (Sociedade De Pescas Sanculo Lda)	Lumbo	Nampula

Source: DG SANCO, European Commission

Shrimp is the main processed product by the major processing establishments. Shallow water shrimp from the semi-industrial vessels which do not carry freezers are processed (sorted, packed and frozen) in facilities on land. However shrimp (both deepwater and shallow water) is mostly frozen and packed at sea in vessels equipped with horizontal plate freezers. Land based facilities may also produce peeled shrimp to special order. Each of the three shrimp aquaculture companies is associated with a processing establishment for packing and freezing the final products. There is presently one processing company based in Angoche operating with shrimp catches from small open deck fibreglass 9m vessels, and also supplied by other artisanal fishers. There is an active trade in packing and export of fresh fish (to South Africa) from the semi-industrial sector. Packing and icing may be conducted on the vessel, or in some cases in shore based establishments. Line caught fish may be subject to some additional processing onshore such as filleting and freezing.

Processing plants supplying the domestic market are poorly developed with respect to hygienic and sanitary conditions. The numbers of operating establishments serving the local market is not available. Much artisanal scale processing is undertaken at landing sites.

### 3.6 Aquaculture

Mozambique is considered to have a high potential for aquaculture development, and much of the projected increase in fish production considered by the PDP II is expected to come from this source. Until now the development has been limited to three commercial farms of marine shrimp (*Penaeus spp.*) and a number of artisanal tilapia (*Tilapia spp.*) farms.

#### 3.6.1 Shrimp farming

The farming of tiger shrimp (*P. Monodon*) is currently undertaken by three private companies (with foreign capital):

- SOL & MAR, located at Beira [DELETED];
- AQUAPESCA, located at Quelimane [DELETED];
- INDIAN OCEAN AQUACULTURE, located at Pemba [DELETED].

All use a semi-intensive farming system in earthen ponds (size range from 5-10 ha) and import feed materials from the region (South Africa and Seychelles) or from Asia. Current

production is at 4.8 tonnes/ha/year. The species produced are *Penaeus monodon* the giant tiger prawn and *Penaeus indicus* the Indian white prawn.

All farms are associated with their own hatchery operations, using wild or farmed broodstock. Two companies also operate processing establishments, but these are under utilised. Increased production is important to achieve efficiencies of scale from vertically integrated operations. So far shrimp in Mozambique are disease free (except for infestation of *Ameson michaelis* "microsporidia").

The processing establishment in Quelimane produces shrimp for further processing (cooking) in France to be sold in cooked chilled form. One of the companies also receives shrimp from artisanal and semi-industrial fisheries. The shrimp aquaculture employs about 1,300 persons with some 130 highly skilled foreigners of different nationalities (Indians, Asians, Europeans and Latin-Americans).

Shrimp producers are organized in an association (Associação de Produtores de Aquacultura) which aims to promote policy support from the Government, and is currently seeking to establish a national quality mark scheme, to differentiate the production from SE Asian products.

Production appears to have peaked in 2007/8 and has fallen back in recent years. The sector has suffered from a number of problems. The industry has developed without a clear market led strategy. Majority of inputs supplies are imported, including feeds. Production has not expectations due to lack of know-how, poor overall management, and impact of white muscle disease "microsporidia" causing occasional high rates of mortalities. There are no national strategies in place for disease control.

At least one farm manages without much chemical intervention and is organically certified by Agriculture Biologique (AB). Developing the high quality niche market approach, building on the reputation of Mozambique wild shrimp, seems to offer potential for development. A veterinary medicine control regime has been put in place by the Government, but there is a need to support producers in its implementation at farm level.

Sanitary conditions should also be improved in order to really comply with the EC regulations. The Competent Authority (the National Fisheries Products Inspection Institute - INIP) so far has not developed the capacity to promote improvements at farm level. The Government of France is supporting a project to help the Associação de Produtores de Aquacultura design an implement a quality improvement and marketing strategy.

### 3.6.2 Tilapia farming

Tilapia production is undertaken on a subsistence basis with few inputs and limited output, characterized by traditional artisanal family type operations mainly applied for self consumption. Local producers consist of 1 family/pond in average. There are different estimates for the number of ponds, from 1,539 to about 4,700 ponds. Some are community operated and many are located in Manica Niassa, Tete, Sofala and Zambézia provinces. Total production was estimated at 100 tonnes in 2005.

According to FAO (2004) the main extensively cultivated species in Mozambique are *Oreochromis niloticus*, *O. mossambicus* *Tilapia rendalli*, and carp. Given the extensive fresh water supplies, the good temperatures and the presence of a native species suitable for aquaculture, this activity would seem to have good potential. However despite the potential and investment and efforts by Government, so far there has been no significant expansion of tilapia farming in Mozambique.

## 3.7 International trade in fishery products

Mozambique engages in a significant level of international trade in fishery products, both export and import, as shown in Annex 6. Exports have been in the region of EUR51 million per year during the period 2007 to 2009, but fell slightly to EUR47 million in 2009, largely due to the impact of the global financial crisis on high value products. In 2009, about 84% of the exports were crustacea, mainly shrimp (corresponding to about 8,500 tonnes of products). A more detailed breakdown of the export of shrimp (shown in Annex 6) indicates that the Japan accounted for just 2% of shrimp exports during 2007-2009 and South Africa for 13%, with the balance directed towards to the EU, with Spain and Portugal accounting for 73% of the

exports. Also of interest is exports of dried, salted or brined fish, which rose to just under EUR 2 million in 2009. These are thought to be regional trade in dried small pelagic fish from the two main freshwater lakes.

Imports of fishery products have risen significantly in recent years, as the domestic economy has improved, from EUR19 million in 2007, to EUR28 million in 2009. Imports appear to make up about 15-20% of domestic consumption, and the trend appears set to continue. Annex 6 shows that the main import is frozen fish (mostly frozen whole small pelagic fish such as horse mackerel). The main sources are Namibia and South Africa, but imports from China are also growing rapidly.

## 3.8 National Institutional Framework for Fisheries

### 3.8.1 Ministry of Fisheries

The Ministry of Fisheries was created under Presidential Decree 6/2000<sup>16</sup>. The duties of the Ministry include *inter alia* the power to coordinate, promote and develop monitoring and surveillance of the fisheries resources and the power to enact specific legislation to regulate the fisheries sector.

The Statutes of the Ministry were approved in 2001<sup>17</sup> under which the competences of the different bodies are defined. The MoF is organised in three Directorates, three departments, four institutes (originally three) and a financial body. The Directorates cover fisheries administration, fisheries economics and human resources, while the three departments cover, aquaculture, international co-operation, and finance and administration. The Department of Fisheries Inspection was reformed into the National Institute of Fish Inspection (INIP) in 2005. The complete structure includes a Ministry Cabinet and a General Inspector (auditor). Regional activities (of quality control, inspection and data collection) are covered by Provincial Directorates of Fisheries established in the five coastal provinces with extensive fishing activities. In the other provinces the Ministry delegates authority to the Provincial Government.

The current organisational structure<sup>18</sup> is summarised in Figure 3, and reflects a separation between the legal and policy decision making by the Ministry and Secretary of Fisheries, and the implementation activities by the various Directorates (including Provincial Directorates) and subordinate technical institutes.

The Ministry of Fisheries and all of its umbrella institutions comprise a total staff of about 1500. About 10% of the staff are reported to have completed higher education. The Ministry of Fisheries itself (comprising ADNAP, DNEP and also INIP) have 109 staff, of which 34% have completed higher education. The Fisheries Research Institute (IIP) has a total of 119 staff, of which 29% have completed higher education. The main divisions are described in the following paragraphs.

**National Fisheries Administration (Administração Nacional das Pescas - ADNAP)** is the body directly responsible for front line regulatory controls, including licensing, and MCS activities, and enforcement of fisheries legislation. It also supervises the Provincial Services of the Ministry, responsible for licencing, inspection and statistics.

**Fisheries Research Institute (Instituto de Investigação Pesqueira-IIP)** has a mission to evaluate and to report on the state of the fishery resources of Mozambique and to provide scientific advice regarding the levels of sustainable exploitation. The IIP provides the information on the biology and the ecology of the aquatic resources as a basis for responsible management.

<sup>16</sup> Presidential Decree 1/2000 from 17.01 extinguishes the Ministry of Agriculture and Fisheries and creates the Ministry of Fisheries.

<sup>17</sup> Ministerial Decision 75/2001 from 09.05.

<sup>18</sup> Defined respectively by Ministerial Decisions 55/2000 from 07.06 2000 and 177/2001 from 28.11.2007

**National Fish Inspection Institute (Instituto Nacional de Inspeção Pescado - INIP)** is the Competent Authority responsible for sanitary controls in the fishery sector and is represented in the Provincial Directorates of Maputo, Sofala and Zambézia, being the provinces with developed fisheries export processing infrastructures. It undertakes sanitary inspections of vessels, landing sites and processing units, as well as issuing export certificates. It possesses a functional fish inspection laboratory in Maputo with subsidiary laboratories in Beira and Quelimane.

**Fisheries Development Fund (Fundo de Fomento Pesqueiro-FFP)** was originally established in 1988 to coordinate donor funds and manage public sector budgets, including the reallocation of part of the license income (50%) from the fishery back into fisheries related activities. In 1996 FFPs mandate was furthermore widened to allow for a more active role in credit operations partially funded through licence income (50% of license incomes are allocated to FFP).

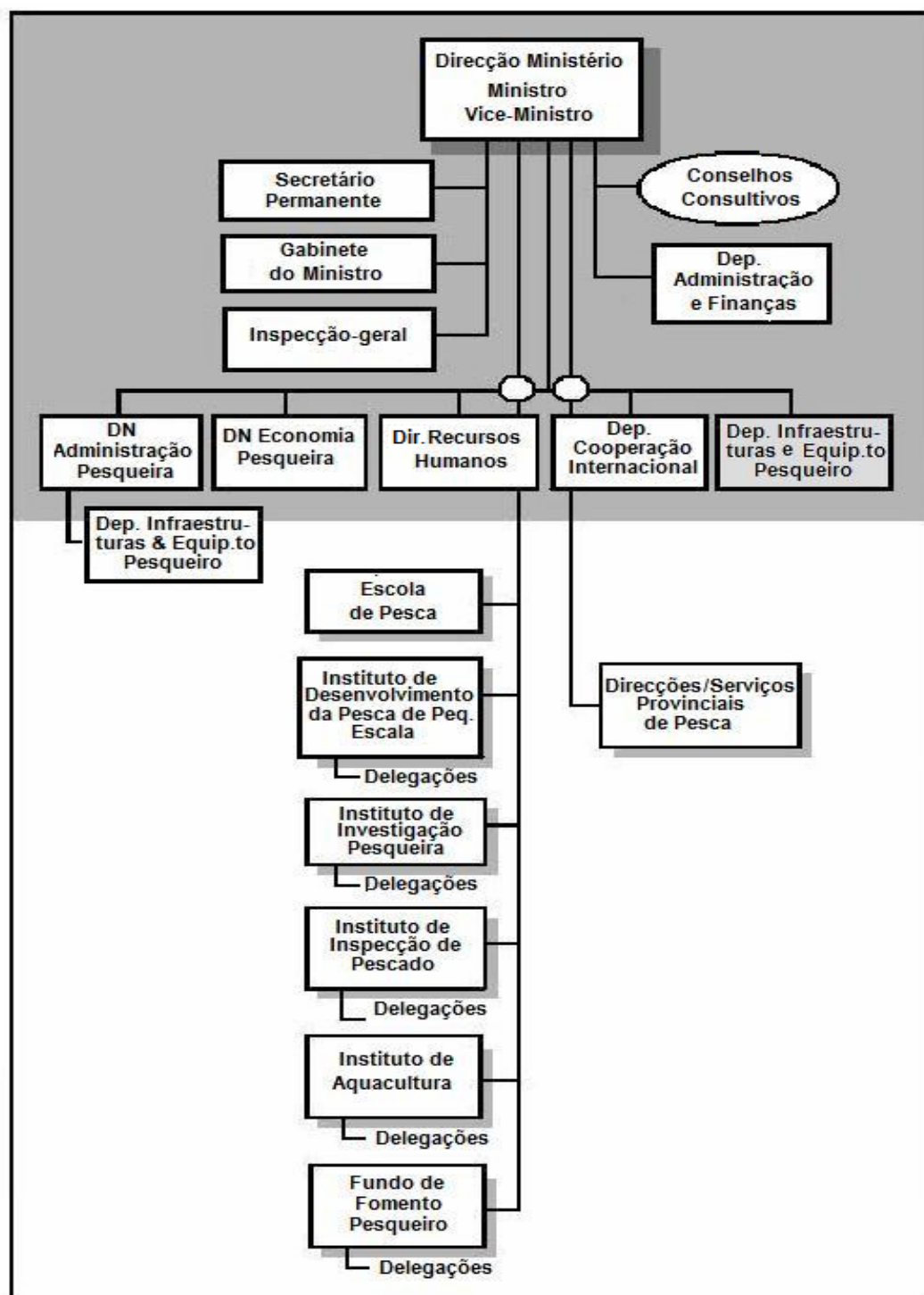
The current Fisheries Law foresees the establishment of a National Fund for the Promotion of Fisheries (Art. 10). FFP was subsequently formed by Ministerial Decision in 2003 according to which: *"FFP is a public entity with legal personality and financial and administrative autonomy under the supervision of the Ministry of Fisheries"* (Art. 1º).

The objective of the FFP is to "give financial support to actions aiming at stimulating private investment, in particular national, in areas considered to be a priority within the context of the objectives of the fishing policy and the implementation strategy thereof.

It is also charged with ensuring:

- the management and control of revenue from license fees and funds made available to the sector by international agencies as donations and external funding. Including the resources aimed at encouraging private investment.
- the distribution of part of the revenue generated, among the various fisheries public administration bodies to finance recurrent costs.
- the budgeting and financial execution of public investment programmes

In effect the FFP represents the financial agency within the Ministry of Fisheries responsible for financial management of development activities. The FFP receives national and international funds for fisheries and undertakes payments to the different departments, institutions or public/private projects in fisheries, providing financial support for actions stimulating private investment, research programmes and projects, and experimental projects. FFP is governed by a Board of Administration is presided over by a representative from the Ministry of Fisheries and derives income from implementation fees for donor funded projects, as well as an administrative fee ("Fundo de Bónus de Rendibilidade") of 5% levied on licence fees, fines etc.



Source: Ministry of Fisheries

**Figure 3: Organogram of the Ministry of Fisheries**

**National Institute for Development of Aquaculture (Instituto Nacional de Desenvolvimento da Aquacultura - INAQUA)** aims to promote the development of the aquaculture sector in Mozambique through direct partnerships in investment in aquaculture production. It also aims to support the development of the administrative framework for the aquaculture investment, and monitor progress, as well as develop research, demonstration, dissemination and extension methods for aquatic species and to adapt them to the environmental conditions of the country.

**Small scale Fisheries Development Institute (Instituto De Desenvolvimento De Pesca De Pequena Escala - IDPPE)** aims to establish and implement policies, strategic plans and programmes which support the development of small fishery production. It therefore seeks to identify and implement projects in the artisanal fishery sector, especially in relation to improved fishing technology, preservation and marketing of the catch, and in relation to activities complementary to fisheries (boat building, net repair, processing etc). It therefore directs investment in small scale fisheries infrastructure, and undertakes training, lectures, aimed at strengthening the professional qualification of the sector.

**School of Fisheries (Escola de Pesca – EP)** develops and implements vocational training courses in navigation and fishing technology, fisheries biology and fisheries extension, marine engineering.

### 3.8.2 Fisheries policy

#### *Objectives of the Ministry of Fisheries*

The stated objectives of the Ministry of Fisheries are to<sup>19</sup>:

- Assure the responsible management, protection and conservation of fisheries resources, mobilising, amongst other means, participative management
- Assure the protection and conservation of the marine resources and sustainable exploitation of fisheries resources
- Promote the qualitative and quantitative development of fisheries activities and their outputs
- Promote and develop in waters within the national jurisdiction fishery production destined for the supply of the internal market and for exports
- Promote the development of sectoral capacity and contribute to the improvement of the quality of life of fisheries communities

#### *Fisheries objectives in PARPA II*

Fisheries objectives are also clearly stated within the PARPA II, with the following aim for artisanal fishing:

- (i) improving the living standards of fishing communities, and
- (ii) guaranteeing the sustainable exploitation of fisheries resources and of aquaculture.

Also according to this document, government actions in this area seek to:

- (iii) create and/or rehabilitate infrastructures to support artisanal fishing in the main fishing centres,
- (iv) increase the levels of supply of national fisheries produce to the domestic market,
- (v) encourage the distribution and sale of fisheries produce and of fishing inputs, and
- (vi) increase the levels of production of small scale aquaculture.

The PARPA II also indicates that Government will intervene to:

- (i) strengthen the supervision of fishing and of aquaculture,
- (ii) support the co-management of artisanal fisheries,
- (iii) build the capacity of the CCPs,
- (iv) pursue the ordering of artisanal fisheries and of aquaculture,

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<sup>19</sup> See <http://www.mozpesca.gov.mz/>

- (v) pursue implementation of the fisheries statistical plan,
- (vi) strengthen institutional coordination of aquatic conservation areas, and
- (vii) introduce, improve and publicise improved techniques of fishing, conserving and processing artisanal fisheries produce.

PARPAII also provides some indications with regard to policy towards industrial and semi-industrial fishing, with the objective of improving the competitiveness and sustainability of commercial fishing, so as to increase its contribution to exports. To attain these goals, the following actions are programmed:

- (i) improve the commercial fishing support installations,
- (ii) promote the training of onshore technical staff and managers for the fishing companies,
- (iii) conclude the reform of the fisheries public administration,
- (iv) strengthen training in basic specialisms missing in the sector,
- (v) support the creation and certification of Mozambican brands for prawns, and
- (vi) establish a national market information system.

#### *Fisheries Master Plan 2010-2019*

The Fisheries Master Plan 1995-2005 (PDP) was a sectoral policy document, developed during the early 1990s with the support of DANIDA. Between 2005 and 2010 no specific fisheries policy instrument was in place. A new Fisheries Master Plan (Plano Director das Pescas II 2010-2019) was approved by Government at the end of 2010. The PDP II is presented in seven main sections, corresponding to the logical framework approach to project life-cycle management. The plan is supported by a logical framework matrix which sets out the main content and some of the principal intervention projects expected:

- Context (providing a brief background to the sector)
- Situation of the sector describing the problems to be addressed, and 10 year vision for development
- Strategic objectives for 2010-2019
- PDP Components and expected results for each component
- Expected impacts and sustainability, with monitoring indicators at the level of objectives and for each component
- Organisation, programming and means of implementation setting out the institutional and time scheduling arrangements, including for monitoring and evaluation

The overall objective of the PDPII is fully aligned with the objectives established by the PARPII and the Five Year Plan 2010-14, namely that the fisheries sector delivers increased benefits through:

1. Strengthened the contribution of the fishery sector in to food security of the population;
2. Improved the conditions of living in the artisanal fishing communities and small scale aquaculture;
3. Increased contribution from industrial fisheries and small scale aquaculture to national economic and social development; the plan considers the need to gradually replace foreign licensed operators with operators with an economic linkage with Mozambique, and aims to strengthen national technical skills to this end.

4. Increased contribution of the sector to the balance of payments within the frame of a public administration enabled to meet these ends in general and to support of the sustainable exploitation of fisheries resources and aquatic ecosystems.

The plan aims to increase production from 151,430 tonnes in 2009 to 301,000 tonnes in 2019, with about 60% of the increase derived from aquaculture, and the balance from capture fisheries. The plan foresees supplies for internal consumption (which includes imports) rising from 170,000 tonnes/year to 298,000 tonnes, and export rising from a value of about US\$ 70 million in 2009 to US\$ 176 million in 2019.

The Plan sets out results and activities to be implemented under each of the above headings. It also sets out the role of Government in the provision of investment finance for public infrastructure and services, with priorities set out in terms of:

- Rehabilitation and construction of port infrastructure
- Construction of infrastructure to support development of aquaculture
- Promotion of development (extension, introduction of new fishing technologies etc)

It recognises the need for a public administration of the fishery sector to be supported by the state budget, and in general aims to ensure that the cost of public administration does not exceed 5% of the value of sector production. Licence fees are considered to be the principal source of receipts from the sector, and the level of fees should take into account the sustainability of the public administration of fisheries, as well as serving as an instrument for fisheries management, taking into account the economic and developmental conditions.

International cooperation is expected to provide an important element of PDP II investment requirements with the following priorities for intervention activities with development projects in the domains of:

- artisanal fisheries
- aquaculture (especially small scale)
- expansion of the semi-industrial fleet
- construction of landing infrastructure and support installations of support (focus on production and distribution of ice)
- training in intermediate and advance fishing and aquaculture technologies
- increased levels of fisheries cooperation within SADC and the Indian Ocean regions

The Master Plan 2010-2019 clearly indicates that policy is to ensure full exploitation of EEZ by national operators. However the Plan does not address specifically the policy towards access rights for foreign vessels in the meanwhile, in respect of fish resources which cannot be exploited by Mozambican enterprises.

Whilst the PDP II has clear targets and all of the measures to be implemented are clearly set out, the plan is not costed (i.e. the cost of the interventions foreseen is not stated), and it is therefore not possible to assess the economic returns of the investments proposed. Clearly there will be significant investment requirements in infrastructure and development of institutional capacity if the ambitious targets are to be achieved, as well a significant level and quality of intervention management.



### 3.8.3 Legal and regulatory framework for fisheries

#### *Fisheries Law*

The current Fisheries Legislation is composed mainly of the Fisheries Law<sup>20</sup> and the General Regulation for Marine Fisheries<sup>21</sup>. It also comprises several specific legal instruments dealing with policy and institutional issues and establishing specific management measures namely with regard to shrimp, fishing zones, mesh sizes and prohibition of certain activities.

The Fisheries Law establishes the public domain over the fishing resources found in waters under Mozambican jurisdiction and that the State is responsible for regulating the conditions of their use and exploitation. Fisheries management plans are to be prepared by the Ministry of Fisheries and adopted by the Council of Ministers.

The current Fisheries Law is outdated and not in compliance with many of the international and regional commitments that Mozambique has taken after 1990. The Fisheries Law is currently being revised, and was redrafted in 2009 and 2010 with support from FAO. The National Assembly is currently considering the legislation<sup>22</sup>. The European Commission was not requested to provide any views with regard to the content of the new legislation.

#### *Access Fees for foreign vessels*

Access fees for private licences for foreign vessels were revised in 2009, and are now set under Diploma Ministerial No. 270/2009, issued on 29 December 2009 (Boletim da Republica No.51/2009, 29 December 2009). These are summarised in Table 8. Note that private licence fees are discounted for landing within Mozambique. Licences issued by Mozambique to non-EU surface longliners do not specify the target species, while the EU protocol makes reference to highly migratory species as listed in Annex 1 of UNCLOS. The fees paid by vessel operators under the EU-Mozambique FPA are also shown in Table 8 for comparison. The EU access fees can be increased if catches exceed reference levels set in the protocol, while fees paid by non-EU operators are lump sum and not related to actual catches in the EEZ. Note that Mozambique also benefits from sector support from the EU as a component of the Protocol.

**Table 8: Summary of foreign fisheries access fees schedule according to Mozambique regulations**

Flag	Landing port	Licence fee (US\$)		Licence fee (EUR)	
		Purse seine	SLL	Purse	SLL
Mozambique	Mozambique	15,000	10,000	11,278	7,519
Mozambique	Foreign	28,000	26,000	21,053	19,549
Third country	Mozambique	28,000	26,000	21,053	19,549
Third country	Foreign	35,000	32,000	26,316	24,060
EU (FPA)				12,000*	10,000*

\* on the basis of EUR 100 per tonne with EUR 35 borne by EU shipowners and EUR 65 borne by the EU.

Source: Ministry of Fisheries, Mozambique

### 3.8.4 Fisheries budgets

Fisheries activities are well defined in the national budget (Orçamento Geral do Estado). The evolution of the budgetary disbursements over the period 2007 to 2010 is shown in Table 9. Overall, the budget has risen from EUR 19.6 million in 2007 to EUR 30.9 million in 2009, but

<sup>20</sup> Law 3/90 from 27.09.1990

<sup>21</sup> Decree 43/2003 from 10 December 2003

<sup>22</sup> a copy was requested by the consultants but was not provided by the Mozambique authorities

fell to EUR 24.1 million in 2010. Over the period, the Governments expenditure on fisheries has accounted for some 1.1% of public expenditure. About 85% of the expenditure is in capital investment, and the balance on operational expenses (mainly salaries).

**Table 9: Evolution of the budgetary disbursements over the period 2007 to 2010**

		2007	2008	2009	2010	Average 2007/2010
		EURO				
Code	Operating budgets					
	Central					
3701	Ministerio das Pesca	716,142	1,440,054	1,288,310	1,119,684	
3707	Escola da Pesca	244,618	307,183	312,288	310,288	
3781	Fundo de Fomento Pesqueiro	-	-	-	-	
3782	Instituto Nacional de Investigacao Pesqueira	439,711	534,261	546,931	505,847	
3783	Instituto de Desenvolvimento de Pesca Pequena Escala	240,518	332,224	340,989	310,690	
3784	Instituto Nacional de Inspeccao de Pescado	424,876	527,631	578,680	735,610	
	Instituto de Desenvolvimento da Aquaculture	-	-	-	282,062	
	Provincial	-	-	-	-	
3721	Direcção Provincial das Pescas	1,147,378	1,481,929	1,562,389	1,151,827	
	Sub-total	3,213,242	4,623,281	4,629,588	4,416,007	4,220,529
	Investment budgets	-	-	-	-	
	Central	-	-	-	-	
3781	Fundo de Fomento Pesqueiro	16,198,639	22,695,505	25,906,909	19,137,395	
	Provincial	-	-	-	-	
	Direcção Provincial das Pescas	167,613	611,609	414,114	534,474	
	Sub-total	16,366,252	23,307,114	26,321,023	19,671,869	21,416,565
	Total fisheries budget	19,579,494	27,930,394	30,950,611	24,087,877	25,637,094
	Total state budget	2,013,007,373	2,513,134,080	2,579,716,494	2,633,542,689	2,434,850,159

Source: Orçamento Geral do Estado, Direcção Nacional de Orçamento <http://www.dno.gov.mz/docs.html>

### 3.8.5 Sanitary conditions for fishery products

Since 2005 the nominated Competent Authority with responsibilities for sanitary controls of fishery products has been the Instituto Nacional para Inspeção do Peixe, (INIP - National Institute for Fish Inspection) which is an administratively autonomous unit under the umbrella of the Ministry of Fisheries. The institute integrates both inspection and laboratory services with 4 main departments, Department for Sanitary Licensing, Department for Sanitary Certification, Department of Laboratories and Department for Administration and Human Resources.

In 2005 and 2006, the Food and Veterinary Office of DG SANCO undertook inspection missions to Mozambique and found that there was lack of coordination between the CA and the regional offices, lack of follow up on noted deficiencies, lack of control over artisanal vessels and landings, no assessment of HACCP plans, permitted use of hyper-chlorinated water, no inspection of aquaculture establishments, no sampling and testing for heavy metals, and inadequate testing of water and ice. The residue monitoring plan for aquaculture products was non-compliant and was not implemented. Six establishments were approved when they did not meet the conditions, even though they were subsequently de-listed (before the inspection mission). The Competent Authority, Instituto Nacional de Inspecção Pescado of the Ministry of Fisheries, was required to prepare an action plan of urgent measures, and submit it to the Commission within 25 days.

The Food and Veterinary Office of DG SANCO undertook a further follow-up mission to Mozambique in November 2007 and found much improved conditions. New inspection procedures had been implemented and 19 additional inspectors recruited and trained (corresponding to the creation of INIP). Deficiencies noted in establishments and vessels were given written deadlines for correction. However one closed establishment still remained on the approved list and non-Mozambican-flagged vessels were inspected and listed. A number of inconsistencies were also identified in certification procedures (e.g. backdating of certification, certification of product caught by non-authorised vessels). Fishing vessel inspection frequency (yearly) was also considered to be insufficient. There were some deficiencies in HACCP plans (especially sulphite hazard). There was no formal organisation of sampling and testing for monitoring of fishery products. Testing laboratories were still not accredited, although 3 had commenced proficiency testing. Establishments and vessels visited were globally in a satisfactory condition with no major deficiencies detected. Out of 11 recommendations 7 have been satisfactorily addressed and the balance are subject to a revised plan of corrective actions. International donors, including the EU via the ACP SFP programme, have been active in supporting Mozambique strengthen capacity for compliance with sanitary conditions for international trade in fishery products.

The Commission accepted the guarantees provided by the Competent Authority and Mozambique remains listed in Annex 1 Decision 2006/766/EC as regards the list of third countries and territories from which imports of fishery products for human consumption are permitted. As a result the current list of approved establishments and vessels lists 12 processing establishments, 4 factory vessels and 69 freezer vessels as being authorised to supply the EU market with fishery products. During the period of the evaluation three rapid alerts have been notified by the RASFF Office of DG SANCO (all in 2010, concerning border rejections by Spanish authorities of consignments of shrimp due to deterioration). Despite this, the sanitary controls applied to exported fishery products may be regarded as compliant with international requirements, and risk of loss of access to export markets is regarded as minimal.

### 3.8.6 Fisheries Research

#### *Institutional basis*

Within the umbrella of the Ministry of Fisheries, the Instituto Nacional de Investigação Pesqueira (IIP) is responsible for research in relation to fisheries resources and biological aspects, aquaculture and the marine environment. IIP provides advice to the Ministry regarding the state of stocks and their exploitation based on data collected from the industrial and semi-industrial fisheries.

The IIP is a classic fisheries research institute organised according to types of fisheries, but it should be noted that a new research strategy is in the process of being adopted, which will result in the re-structuring of the institute. This will reportedly lead to the establishment of a structure more in line with ecosystem components (e.g. pelagic and demersal components) considering the goal of supporting the introduction of an Ecosystem Approach to Fisheries (EAF) in Mozambique.

The total number of staff of the institute is 177 of which 33% possess higher academic qualifications (i.e. bachelor, master and doctor degrees). Staff are distributed in the Maputo headquarters (48%) and amongst the delegations of the institute that have been established in 9 provinces out of a total of 10. These delegations include 7 coastal provinces and 2 inland provinces with large freshwater bodies (i.e. Tete and Niassa).

#### *Annual budgets*

The annual budget of the IIP has increased significantly in recent years from around EUR 500,000 in 2003 to EUR 1.3 million in 2009. The State budget accounts for a variable component of the institute budget, ranging from 26% to 36% which is used mostly to cover salaries (Table 10). FPA related funding is reported to account for roughly half of the total institute budget.

**Table 10: Budget of the Instituto Nacional Investigação Pesqueira (IIP) in 2008 and 2009**

	2008		2009	
Source	Euro	%	Euro	%
State budget	396,606	26	462,013	36
EU (FPA)	721,804	47	655,553	51
NORAD	178,791	12	-	0
ICEIDA	114,042	7	20,794	2
PPABAS	93,026	6	72,022	6
PPANNCD	8,431	1	16,097	1
SWIOFP	-	0	42,880	3
Other	8,999	1	16,308	1
Total	1,521,700		1,285,667	

Source: IIP Annual Report 2009

#### *Scientific research and advice*

Formal stock assessments and related advice are produced regularly for the shallow-water shrimp with assistance from external consultants due to limited in-house capacity. For other stocks, the advice provided is based largely on stock indicators such as trends in CPUE. IIP also has the responsibility for the running of data sampling scheme for artisanal fisheries, which presently cover all of the coastal provinces. Improvements are still needed in terms of coverage of artisanal fisheries, but the methodologies applied are considered of good quality, developed with external assistance.

Note that the responsibility for collecting, compiling and processing of statistics from the industrial and semi-industrial fisheries lies with the Fisheries Administration (DNAP). IIP also carries out sampling industrial and semi-industrial fisheries by sampling in ports or through IIP observers. This includes information on the species composition of the catches, by-catch and discards. IIP also collaborates in some important international research initiatives such as the South West Indian Ocean Fisheries Project (SWIOFP) and the Agulhas and Somali Current Large Marine Ecosystems (ASCLME), which are two GEF-funded complementary projects with the overall goals of achieving sustainable fisheries and introduce the ecosystem-based approach in management of marine resources.

### ***Fisheries Management Plans***

A draft Shrimp Fisheries Management Plan has been prepared and is reported to be in the process of being adopted. The main objective is to manage fishing capacity in the Sofala Bank shrimp fisheries (although the plan includes also other shrimp fisheries). Another plan awaiting approval is the Line Fisheries Management Plan. The need for a Strategic Management Plan for Tuna Fisheries has been identified, but there appears to have been limited progress.

## **3.9 International Dimension of Mozambique Fisheries Sector**

### **3.9.1 Fisheries Agreements with the EU**

The EC and Mozambique concluded their first Fisheries Agreement in October 1988 providing Community vessel owners fishing opportunities for shallow-water shrimp, deep-water shrimp and tuna in return for financial compensation. In practice, this Agreement was gradually restricted to tuna fishing before being terminated in 1993 by Mozambique, which considered that it was no longer in a position to promote the development of its fishing sector through this means. In May 1996 the EU Council of Ministers requested the Commission to negotiate a new bilateral Agreement with Mozambique. Exploratory talks were held with Mozambique from 1999 and a new Agreement was initialled on 21 October 2002. This Agreement was introduced by Council Regulation (EC) No 2329/2003 of 22 December 2003 “*on the conclusion of the Fisheries Agreement between the European Community and the Republic of Mozambique*”. The first protocol under this Fisheries Agreement entered into force on 1 January 2004 and provided fishing opportunities for deepwater shrimp trawlers, tuna purse seiners and surface longliners. The duration of the protocol was until 31 December 2006, when it was replaced by the current Fisheries Partnership Agreement, which came into force on the 1<sup>st</sup> January 2007, and is due to expire on 31 December 2011.

The current EU-Mozambique Fisheries Partnership Agreement provides fishing possibilities for EU vessels fishing in the waters of the Mozambique. It includes fishing possibilities for up to 44 purse seiners and 45 surface longliners in the EEZ of Mozambique. The Member States interested in fisheries activities in the EEZ of Mozambique are mainly Spain, France and Portugal. More details are provided in Section 5 of this report.

### **3.9.2 Other Fisheries Cooperation Agreements**

Apart from the EU fisheries agreement formal fisheries agreements are in place with South Africa (2008, 2007), Cuba (2004) and Mauritius (2002). More recently Agreements have been signed with Chile (2008), Brasil (2008), Vietname (2007), Angola (2007) An Agreement with Namibia (first established in 2001) is under revision. All of these agreements provide for the possibility of fisheries access in compliance with current legal conditions prevailing in the countries and for fisheries cooperation in terms of scientific institutions, technical assistance and joint ventures. Specific details for three of the Agreements are shown in Table 11.

**Table 11: International Fisheries and Commercial Agreements (excluding EU agreement)**

Partner	Details
Mauritius	Signed: 29/03/2002; Duration 3 years, continuation if with agreement of both parts. Includes: Institutional: research, training, Exchange of data and technology, fish processing and aquaculture and Economical: Access for fishery opportunities (gamba, highly migratory species, demersal, and investments in aquaculture, via development of joint ventures between vessel owners of both countries)
Cuba	Signed: 15/04/2004. Includes Institutional: freshwater aquaculture, artisanal fisheries (technology and fish processing, fishing gear), fisheries administration (regulating, database, research, training (Cuban trainers and teachers to go to Mozambique) Private Collaboration: availability of crews from Cuba.
South Africa*	Agreement on Fisheries and Coastal and Marine integrated Management, with Cooperation areas include: Institutional: Research and management of marine and coastal resources, Exchange of scientific and technical information, MCS, eco-tourism, development of marine aquaculture, mitigation of marine and coastal pollution impacts, training program. Economical Cooperation: development of joint-venture companies and access to fishing opportunities of both countries.

\* Part of multi-component cooperation Agreement comprising sectors of fisheries, environment, tourism, transports and communications.

### 3.9.3 Participation in regional fisheries organisations

#### *Indian Ocean Tuna Commission*

Mozambique is not currently a member of the IOTC, and has therefore until now not been bound by its management recommendations for migratory resources of tunas and tuna like species. However, this has not necessarily impacted negatively on management.

Firstly, both the EU and Japan (the main foreign fishing operations targeting large pelagic resources in the Mozambique zone are IOTC members. According to the IOTC Agreement, Art IX states that Members shall comply with the management measures issued by IOTC and Art X (paragraph 4) states that Members shall collaborate on the exchange of information of fishing for stocks covered by the Agreement by any State or Entity which is not a member. Therefore, the implication is that even when fishing in a non-member EEZ, EU and Japanese vessels shall be bound by the IOTC management recommendations.

Secondly it should be noted that some of the management measures in place in Mozambique are stricter than those in force by the IOTC; Examples are: a) the by-catch limit is 10% of the total catches onboard the fishing vessel per fishing trip, b) shark-finning is strictly prohibited, and discarding is prohibited. The Mozambican authorities have until now not been able to enforce these measures, but the situation may change as observer and control capacity is developed.

Until recently, Mozambique's participation in the IOTC was as an observer without any formal binding obligation to apply the management measures adopted by the IOTC. During the recent 15<sup>th</sup> Plenary Session of the IOTC (18-22 March 2011) Mozambique submitted its application for status as Cooperating non-Contracting Party. This status is also held by Maldives, Senegal, South Africa, and Uruguay.

According to IOTC Resolution 03/02 on "Criteria for attaining the status of Cooperating non-Contracting Party", the Compliance Committee is responsible for reviewing requests for cooperating status and for recommending to the Commission whether or not an applicant should receive cooperating status. As the sessions of the Compliance Committee usually precede the plenary sessions of the IOTC, formal acceptance of Mozambique could occur in at the beginning of 2012.

It is important to point out that Mozambique's application implies a commitment to respect the Commissions' conservation and management measures and the obligation to inform IOTC of the measures it takes to ensure compliance by its vessels of IOTC measures. Mozambique's application is accompanied by documentation of various aspects of fisheries, including tuna fisheries in particular<sup>23</sup>. The following points are stated in the application:

- In 2010 Mozambique adopted a new policy of requiring all foreign tuna vessels report to port for inspection prior to the beginning of fishing operations.
- Mozambique is reviewing its penalty and sanctions scheme for national and foreign vessels, and considering of introducing highly deterrent fines, going up to 1 M US\$ for illegal fishing, for under reporting and serious infractions, automatic confiscation of vessel to the benefit of the State.

In the past there appears to have been some reluctance on the part of Mozambique to increase participation in the IOTC. The allocation of fishing possibilities is currently on the agenda of the IOTC. Initial steps were taken in a recent meeting that took place on 16-18 February 2011, where five allocation proposals were presented and discussed<sup>24</sup>. Based on the conclusions of this meeting, it appears there is still some way to go on defining the guiding principles that can be accepted by all parties. Nevertheless it is clearly in the interests of Mozambique to increase its formal participation in this regional body.

### ***Indian Ocean Commission***

The IOC is an intergovernmental organization created in 1984 which now comprises five Member States: Comoros Islands, France, Madagascar, Mauritius and Seychelles. The main organs are the Summit of the Heads of State; The Council of Ministers (one ordinary session per annum), the Committee of the Permanent Officers, and the General Secretariat (the executive body which was established in Mauritius in 1991). The objective of the IOC is to reinforce the regional links to support economic development. It has close links to other regional cooperation bodies such as COMESA or the SADC. In addition to the political dimension, its activities also focus on the regional dimension of human development and the safeguarding and of the environment and natural resources.

Mozambique is not a member of the IOC and this has limited its participation in some regional donor funded projects targeted at IOC and its member states. In particular, it has not been able to benefit from the ongoing Fisheries Regional Monitoring Programme (Plan Régional de Surveillance des Pêches) of the Indian Ocean Commission (IOC), which is supported by the European Commission DG Maritime Affairs and Fisheries (see Section 3.11.7) not from the now terminated 9<sup>th</sup> Regional EDF pilot project for surveillance. This means that until now Mozambique has not been able to participate in these important projects.

### ***South West Indian Ocean Fisheries Commission (SWIOFC)***

Mozambique is a member of the South-West Indian Ocean Fisheries Commission (SWIOFC), that was formally established in 2004 by Resolution 1/127 of the FAO Council under Article VI 1 of the FAO Constitution. SWIOFC's mandate focuses on management of migratory and straddling stocks within the EEZs of its Member States other than the highly migratory stocks.

The Commission's members include 14 coastal states whose territories are situated wholly or partly within the SWIOFC area of competence. Other countries may participate as observers. In accordance with its statutes, the functions of the Commission include to keep under review

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<sup>23</sup> IOTC-2011-S15-CoC03(E)

<sup>24</sup> Ref: IOTC 2011. Report of the Technical Committee Meeting on Allocation Criteria. Nairobi, Kenya, 16-18 February 2011.



the state of fisheries resources, provide a sound scientific basis for fisheries management decisions and advise member governments and competent fisheries organizations on management measures.

SWIOFC held its first meeting in Mombasa, Kenya 18-20 April 2005, during which it agreed to establish a scientific committee to focus on fisheries data collection and on providing resource managers with information on the status of stocks and to formulate recommendations on fisheries conservation, management and research.

To date SWIOFC has organised two sessions of the Commission, one session of the Scientific Committee, one working party on fisheries data and statistics as well as several workshops on bycatch in prawn fisheries, ecosystem approaches to fisheries management, safety of fishers at sea, improvement of vessel registration, impact of fishing on turtle mortality and use of turtle excluder devices (TEDs). The Second Session of SWIOFC, Maputo, August 2006, decided on a workplan for 2007 for the Commission which includes the preparations for a Conference on the contribution of fisheries development in the South West Indian Ocean to the Millenium Development Goals (MDGs) in 2008.

### *SADC Protocol on Fisheries*

Mozambique is a signatory of the 2001 SADC Protocol on Fisheries which seeks to promote the responsible and sustainable use of aquatic resources by member states and vessels operating under their jurisdiction. This includes stocks within the EEZ of coastal SADC states as well as stocks occurring on the high seas that are of interest. State obligations include the reduction of over fishing; incorporation of the protocol regulation into national legislation and co-operative management of fish stocks where appropriate. Scientific research, skills transfer and the harmonisation of relevant legislation to promote the management of fisheries is promoted. This convention is open to all SADC states. The SADC Protocol on Fisheries came into force in August 2003, providing the fundamental authority and context for a number of regional initiatives (such as the now finished EDF funded SADC MCS Programme and the Benguela Current Large Marine Ecosystem Programme).

### 3.9.4 Piracy

The issue of acts of piracy perpetrated by Somali pirates has impacted significantly on maritime activities in the Indian Ocean. In 2010, there were 219 reported incidents in which there were 49 vessels hijacked, 1016 seafarers taken hostage, 13 seafarers injured, and 8 seafarers killed. In just the first two months of 2011 there were more than 60 pirate attacks, 13 hijackings, and over 240 seafarers taken hostage by Somali pirates. Currently, more than 31 ships and 700 seafarers are being held hostage by Somali pirates for ransom<sup>25</sup>.

The Mozambican flagged shrimp trawler [DELETED] was taken by pirates on 27 December 2010 within the Mozambique EEZ, along with 25 crew (including 2 Spanish, and 3 Indonesians). Nothing has been heard of vessel or crew since. The event has catapulted the issue of piracy to the fore as a major issue within the Mozambican zone. The increased risk in the Mozambique Channel is thought to be due to the success of the international task force patrolling in the Northern part of the Indian Ocean. Coastal security is likely to be increased in future with the foreseen delivery of 5 new patrol vessels to the Mozambican Navy, fabricated in Spain (reportedly 2 large ones 70m, and three smaller ones 12-20m). However, the potential for effective deterrent in the short term is weak.

The issue has caused many fishing vessel operators, including EU, to adjust their strategies to minimise exposure to the piracy risk. It has resulted in the installation of protection onboard, either soldiers (French purse seiners, since August 2009) or private (Spanish and Seychellois purse seiners, since December 2009). This protection imposes restrictions (pair

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<sup>25</sup> World Shipping Council, <http://www.worldshipping.org/industry-issues/security/piracy>

fishing with an inactive vessel standing by the vessel shooting the nets). Other vessels have chosen to transfer their activities to other regions.

### 3.10 International donor assistance in fisheries

#### 3.10.1 Overview

In 2009 there were about fifteen major projects being implemented in the fishery sector with international support. The total value of these projects under way was estimated to be about US\$83.5 million, as indicated in Table 12. The table shows that some 71% of the current investment expenditure is directed at artisanal fisheries development, reflecting the poverty reduction priorities of the PARP II and PDP II. Note that these projects do not include some of the smaller interventions and Mozambique's participation in regional projects. Whilst a detailed analysis is beyond the scope of this study, it is evident that although many of these projects will be implemented over 4 or 5 years, donor investments in the fishery sector are running at a significant level of US\$10-20 millions/year.

**Table 12: Interventions in Mozambique fishery sector by bilateral and multilateral donors (2009)**

Sector	No. of projects / Interventions	Estimated total value (US\$ Million)
Artisanal fisheries	5	59.3
Aquaculture	3	0.8
Inspection and quality control	3	2.5
Port infrastructure	2	20.0
Public fisheries administration	2	1.7

Source: Assistance to the Fisheries Sector of Mozambique Document of the Programme co-financed by Norway and Iceland Final version January, 2009 Republic of Mozambique Ministry of Fisheries.

#### 3.10.2 National Projects

Some of the most relevant of these projects (current or recently completed) are described in this section.

**Sofala Bank Artisanal Fishing Project (PPABAS):** With a value of almost US\$ 18 million co-financed by IFAD, NORAD and the BSF (Belgian Fund for Food Security) and the Government, took place over six years in the period 2002-08 and is extended to 2011. It is mainly a community development project covering education, health, water, associations, fisheries co-management, and fisheries development (research, fishing gear, processing), development of markets and access route, strengthening of financial services and institutional support, policy formulation and legislation;

**Cabo Delgado and Northern Nampula Artisanal Fishing Project (PPCDNN):** With a value of US\$ 23.3 million co-financed by the ADB and the Government, running in the six year period 2003-09. It covers provision of credit, development of community infrastructures and institutional support.

**Inhambane and Gaza Coastal Fishing Development Project:** With a value of US\$ 4.4 million co-financed by Italy and the Government, running for the three year period 2008-10. It covers the improvement of infrastructures and access to support services, processing and marketing, training and strengthening of community organisations;

**Poverty Reduction through Fisheries in Mocímboa da Praia:** With a value of almost US\$ 600,000 co-financed by Canada and the Government, running for the five year period 2005-10. It covers the strengthening of local capacity, institutional support, introduction of sustainable fishing practices, processing, environmental protection and gender equity;

**IDPPE Support and Institutional Capacity Building Project:** With a value of almost US\$ 600,000 co-financed by Ireland and the Government, running in the period 2007- 10, aimed at strengthening the capacity of IDPPE to identify, design, implement and monitor intervention projects

**Institutional Support for the Development of Sustainable Aquaculture:** With a value of almost US\$ 200,000 co-financed by Iceland (ICEIDA) and the Government, which is was implemented in 2008 and 2009. It covers training activities, development of a data base, and support for the establishment of INAQUA.

**Marine Sciences Human Resources Development Project:** With a value of US\$114,000 co-financed by Canada (CIDA) and the Government, taking place between 2007 and 2012. It covers training in MSc. and institutional and community capacity building;

**Developing a Sustainable Model for Small Scale Aquaculture in Tanks and Cages in Niassa Province:** With a value of US\$ 204,000 co-financed by Spain and the Government, taking place in 2008 and 2009. It covers community and institutional capacity building and formulation of management plans;

**Support the Fisheries Produce Inspection System in Mozambique:** With a value of US\$ 2 million co-financed by the United Kingdom (DFID) and the Government, which was implemented between 2007 and 2010. It covers improvements to laboratories, the building of residences for inspectors in the provinces and training.

**Institutional Capacity Building and Acquisition of Laboratory Equipment:** With a value of US\$ 137,000 co-financed by UNDP, USAID, EC and the Government, is taking place in 2008 and 2009. It covers the supply of laboratory equipment and equipment for monitoring heavy metals.

**Strengthening Capacities for Improved Quality Control of Fisheries Produce:** Concerned with traceability of products of small scale fishing): With the value of US\$ 210,000 co-financed by Spain, EC and the Government, is taking place in 2008 and 2009. It covers technical assistance for the diagnosis and validation of control procedures, training of inspectors, technical staff and extension officers, and training of semi-industrial and artisanal operators;

**Beira Fishing Port Rehabilitation Project:** With the value of US\$ 19.7 million co-financed by BADEA, BID and the Government, which was implemented between 2004 and 2009. It cover the rehabilitation of quay number 1 and the processing room, repair of the cold stores, construction of support infrastructures, dredging and the supply of equipment;

**Rehabilitation of the Workshops of the Maputo Fishing Port:** With the value of US\$ 196,000 co-financed by Japan (OFCF) and the Government, which is taking place in 2008 and 2009. It covers maintenance, the supply of spare parts and technical assistance;

**Cahora Bassa Research, Monitoring and Fisheries Development Project:** With the value of US\$ 485,000 co-financed by Iceland (ICEIDA) and the Government, which is taking place over the four year period between 2007 and 2010. It covers building the IIP delegation, training (MSc and PhD), research and monitoring of the semi-industrial and artisanal fisheries, and the development of fisheries strategies and management plans;

**Fisheries of the South-West Indian Ocean (Mozambique):** With the value of US\$ 826,000, co-financed by the GEF (under the Fisheries in the Southwest Indian Ocean project, which has a total value of US\$ 22,7 million, covering eight beneficiary countries: Kenya, Mozambique, Madagascar, Mauritius, Tanzania, South Africa and the Comoros) and the Government, which is being undertaken over the five years between 2008 and 2012. It covers information surveys, data conservation and information technology, assessment and sustainable use of crustaceans, assessment and sustainable use of demersal fish, assessment and sustainable use of pelagic fish, inclusion of biodiversity in national and regional fisheries management, and the strengthening of national and regional fisheries management. In addition to these projects, the following projects are awaiting the approval or signing of the respective agreements:

**Development of Maputo Coastal Resources Fishing:** With the value of US\$ 1.9 million, co-financed by Japan (JSDF) and the Government. It covers community and institutional

capacity building, formulation of resource management plans and adaptation to climate change;

### 3.10.3 Regional projects

#### ***EU-ACP Strengthening fishery products health condition***

The Strengthening Fisheries Products Health Conditions programme was financed under the 8<sup>th</sup> EDF and provides support to ACP third countries to meet the requirements of the SPS measures for international trade in fishery products. The project assists ACP countries to establish sanitary controls in line with EU regulations 852/2004, 853/2004 and 854/2004. The SFP programme closed in November 2010.

In responding to the findings of DG SANCO, Mozambique has been a beneficiary of the EDF regional programme “Strengthening Fishery Product Health Conditions in ACP Countries”. As shown in Table 13 a number of interventions were completed under the SFP Programme during the course of the project, with a total value of EUR 230.652. The interventions included technical assistance to strengthen inspection of traceability systems (especially in small scale fisheries) valued at EUR 60,000 and the supply of vehicles and inspection equipment (valued at EUR 171,000).

**Table 13: Interventions by the SFP Programme in Mozambique**

Module No.	Date	Mission Code	Value (EUR)	Title	Main Activities
Module 1: Strengthening National Health Control Capacity for Fishery Products	January 2009	CA005MOZ (Phase 1 and 3)	18.144	Strengthening of the Mozambique CA control system of fish supplies from small-scale fisheries	<ul style="list-style-type: none"> <li>- Validation of the control system</li> <li>- Preparation of Manual of Procedures for inspection including traceability.</li> <li>- Training of fish inspectors</li> </ul>
	August 2009	CA005MOZ (Phase 3)	22.257	Fish product traceability for 4 inspectors of the Mozambique CA (INIP) [Training Event carried out in conjunction with CA005MOZ phases 1 & 3]	<ul style="list-style-type: none"> <li>- Advanced Training of fish inspectors</li> </ul>
	Date contract signed by supplier 11.06 10	SFP M1 SUP4/128657/GLOBE	82.319,18	Inspection/ IT	Supply of inspection IT equipment
	Date contract signed by supplier 11.06 10	SFP M1 SUP4/128657/GLOBE	88.661,64	Vehicles	Supply of vehicles for inspectors
Module 4 – Strengthening Small Scale Fisheries.	November 2009	ART012MOZ	19.271	Implementation Strategy for Traceability System for Artisanal Fishery Products designated for Export, and Identification of further Needs for Strengthening Conditions for Trade	<ul style="list-style-type: none"> <li>- Review national development plans with regard to the small scale fishery sector</li> <li>- Identify institutional features of the fishery sector,</li> <li>- analysed the main barriers to improving the health, hygiene and quality conditions in the small scale fishing sector, including infrastructure, cold chain and hygiene facilities</li> <li>- Reviewed methods, at the level of the landing and first sale, of ensuring traceability in the supply chain for artisanal fishery products</li> <li>- develop strategy and concrete actions for improving the effectiveness of the traceability system</li> <li>- Assessed the needs for training and extension to small scale fishers and prepare a plan of interventions</li> </ul>
TOTAL			230.653		

Source : Coordination Unit, SFP- ACP programme, Brussels

***ACP Fish II: Strengthening Fisheries Management in ACP Countries***

Mozambique is also a potential beneficiary from the “Strengthening Fisheries Management in ACP countries” programme which is funded under the 9th EDF (EUR 30 million over 4.5 years). This Programme, which became operational in June 2009, is primarily designed to improve fisheries management in ACP countries and to reinforce regional cooperation for the management of shared stocks and the fight against IUU fishing. The aim of the programme is to improve fisheries management in ACP countries so as to ensure that fisheries resources occurring in the waters under the jurisdiction of these countries are exploited in a sustainable manner. ACP Fish II has been conceived as a decentralized programme, made up of a Coordination Unit in Brussels and 6 Regional Facilitation Units based in the 6 ACP regions, namely Western Africa, Eastern Africa, Central Africa, Southern Africa, the Caribbean and the Pacific. The Regional facilitation Unit for Southern Africa is based in Maputo. The Box below shows a summary of the different activity components of the programme.

**Table 14: Activities under the ACP Fish II programme**

Activity 1.1.	Organisation of regional Workshops to follow up Programme implementation
Activity 1.2.	Fisheries policies and master plans devised
Activity 1.3.	Support implementation of management plans and/or conservation and management measures
Activity 1.4.	Assist in formulating fisheries management plans
Activity 1.5.	Training activities for technical staff of national fisheries management institutions or agencies and RFBs
Activity 2.1.	Support the formulation, review or update of MCS and enforcement regulatory frameworks
Activity 2.2.	Strengthen MCS and enforcement institutional capacity
Activity 2.3.	Training activities for fisheries inspectors, observers and judiciary
Activity 2.4.	Carry out studies on the impact of EC IUU regulation and on the needs for compliance with EC requirements
Activity 3.1.	Support to specific requests from beneficiary countries and regional research institutes for specific stocks
Activity 3.2.	Carry out studies and stock assessment in support of fisheries management plans
Activity 3.3.	Strengthen institutional capacity of research institutes and training of staff
Activity 4.1	Support to internal organisation and training of staff for producers'/traders' organisations
Activity 4.2	Formulate, revise or update legal frameworks for private business and investment
Activity 4.3	Carry out market and marketing studies in to assess the needs and potential for inter-regional trade of relevant fish and fish products
Activity 5.1.	Organisation and training of information-sharing departments
Activity 5.2.	Support organisation of IT and website designing/improving and training staff
Activity 5.3.	Evaluation of progress and proposal of further actions

However, in 2010 the European Commission has requested the implementing body (the ACP Fish II Coordination Unit, managed by consultants) to desist from supporting with Components I (Fisheries policy) and II (MCS functions) of the programme in those beneficiary countries which also have an Fisheries Partnership Agreement<sup>26</sup>. This has resulted in the

<sup>26</sup> Point 4.3, Minutes of Joint Committee Meeting, 16/17 September 2010

cancellation of some planned national activities. Mozambique is one of the countries affected. However, Mozambique can benefit from component I & II activities promoted at sub-regional level.

ACP Fish II is supporting a feasibility study on behalf of SADC regarding the founding of a Regional Fisheries MCS centre in Mozambique. The mission was launched in February 2011 and aims to “provide SADC and member states with guidelines for the establishment of the Regional MCS Centre in order to prevent and combat IUU fishing in the region, facilitating cost-effective cooperation and coordination of MCS activities.”. The mission will prepare an operational and financial plan identifying and outline steps to be performed for the installing and start up of the SADC regional MCS Centre.

### ***EU/IOC Regional Plan for Fisheries Surveillance in the South-West Indian Ocean***

The European Commission and the Indian Ocean Commission (IOC) have entered into a partnership to fight illegal, unreported and unregulated (IUU) fisheries in the region. The framework partnership agreement that launches a regional plan for fisheries surveillance in the southwest Indian Ocean was signed in the Seychelles on 23-24 January 2007. The ministerial declaration adopted at the conference endorses several measures that the IOC contracting parties have already committed themselves to applying immediately. The measures include a ban against transshipment at sea (transfer of cargo, crews and supplies between vessels at sea) and denial of access to ports for vessels that have been blacklisted by any regional fisheries management organisation, or that are not included on the “white list” of vessels fishing legally. Measures also include harmonisation of national legislation against IUU fisheries, and setting fines at a level that deter illegal activities.

An important element of the partnership was the launch of the “Regional Plan for Fisheries Surveillance in the South-West Indian Ocean (RPFS)” implemented through the IOC and funded by the DG Maritime Affairs and Fisheries of the European Commission. The EU funded the project with a total of EUR 10 million (with co-finance by IOC member states) covering the first three years (2007-2011). The objectives of the programme are: a) to reduce IUU fishing in the region, b) to contribute to fisheries resources conservation and sustainable management, c) to improve surveillance in the Indian Ocean, and d) to strengthen MCS capacity of the countries in the region. The project coordinates the fisheries surveillance activities within the 5 IOC countries, managing training for inspectors, regional fisheries surveillance patrols (boats and planes) and intelligence (radarsat pictures, links with ATALANTA, exchange of data etc.).

Within the different activities of monitoring and surveillance of the PRSP, a scientific observer component has been designed which will take place in the five IOC countries (i.e. Comoros, La Réunion, Madagascar, Mauritius and Seychelles) and will train three observers per country. Observers shall have a regional accreditation in order to be able to observe on any vessel – national or licensed – in all IOC waters. In addition to the training provided, the project will also assist the countries in the management of their observers. The main goal of this component is to help the IOC countries, all members of the IOTC, to comply with the IOTC Resolution and to increase their capacity to develop a coordinated strategy for a sustainable development of the fisheries.

Mozambique is not presently a formal part of this project. However due to strong interest amongst the countries involved for a better surveillance of the Mozambique Channel, Mozambique started cooperation with the project in 2007, with participation of Mozambican inspectors on board IOC patrol vessel when patrolling the Mozambican EEZ. This cooperation has been on an ad hoc basis and is not yet formalized. More information regarding the prospects for enhanced cooperation is provided in Section 3.11.7

### ***World Bank/GEF South West Indian Ocean Fisheries Project***

The South West Indian Ocean Fisheries Project (SWIOFP) is funded by the World Bank/GEF (plus others) and works with Comoros, France (by virtue of its islands in the region although it is not a beneficiary of the grant agreement), Kenya, Madagascar, Mauritius, Mozambique, Seychelles, South Africa (East Coast only), and the United Republic of Tanzania. The project is intended to run for 4-5 years, with a closing date in the grant agreement specified as 30th November 2011. The total project budget is US\$22.65 million, with US\$12 million provided by

the GEF, US\$6.68 from participating countries as counterpart finance, US\$2.27 million from the Norwegian Ministry of Foreign Affairs, US\$1 million from the French Global Environment Fund, and US\$0.7 million from the Food and Agriculture Organisation (FAO) of the United Nations. The objective of the project is 'To promote the environmentally sustainable use of fish resources through adoption by countries riparian to the Southwest Indian Ocean of a Large Marine Ecosystem (LME)-based approach to fisheries management in the Agulhas and Somali LMEs that recognizes the importance of preserving biodiversity.'

This is to be achieved through identification and study of offshore non-tuna species and their exploitation within the South West Indian Ocean, development of institutional and human capacity for both fisheries science and management, and development of fisheries management plans at both national and, where appropriate, regional levels. The project has six main components. Component 1 addresses data and information technology. Components 2-4 cover assessment and sustainable use of crustacean, demersal, and pelagic species respectively. Component 5 focuses on ecosystems and biodiversity issues, while Component 6 has responsibility for both the project management structures (e.g. the Regional and National Management Units) as well as for the preparation of management plans, a Trans Boundary Diagnostic Analysis (TDA), and a Strategic Action Plan (SAP).

Of particular relevance to Mozambique is the strengthening of observer capacity under this project. Four out of six components of the project (crustaceans, demersal, pelagic and biodiversity) include the deployment of observers, and the project has made provisions for a total of 3,500 observer days, with around 1,000 days dedicated to the pelagic component over a period of two years. Five observers per country will be trained for three weeks under the project and SWIOFP will use forms designed by IOTC as well as the IOTC Reporting Template for the pelagic component. It is the intention that trained observers should be used by the respective countries for observer activities outside SWIOFP during the period of the project and after, in particular they could be used within the national and regional programmes of countries in the region.

A recent (2011) mid-term review of the project found the project design to highly relevant and coherent, but that implementation to-date was unsatisfactory<sup>27</sup>. Some of the most important reasons for the slow progress in implementation were: the failure to establish a fully-functioning Regional Management Unit (RMU) prior to the commencement of the project and thereafter slow and staggered recruitment of the RMU staff; slow initial disbursement of the GEF grant to the project; capacity weaknesses of many of the project management structures and individuals on which the project relies heavily for implementation; the rise of piracy in the region which has severely hampered the planning and implementation of research cruises ; problems with the speed of both procurement and disbursement ; and the implementation difficulties arising from a project covering nine countries, three official languages a very large geographical area, and considerable differences in capacity levels within the region.

### 3.10.4 Future projects

A number of future projects are also in the process of design and development. These are summarised in Table 15.

Of particular interest in Table 15 is the proposal for the joint NORAD/ICEIDA Programme "Assistance to the Fisheries Sector of Mozambique". The design of the programme has accounted for constraints identified in the final evaluation of the 2005-2008 NORAD programme (inadequate monitoring, lack of separation between the policy fisheries administration functions, lack of capacity to perform studies and formulate policies and strategies). The project objective is to "*strengthen capacity and competence of the fisheries administration in the area of promoting the development and management of the fisheries and*

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<sup>27</sup> SWIOFP Mid Term Review, Graeme MacFadyen, Poseidon Aquatic Resource Management Ltd, March 2011. <http://www.swiofp.net/documents/mtr-2011/mid-term-review-report-prepared-by-graeme-macfadyen-director-poseidon>



*of aquaculture, in order to achieve sustainable and viable use of aquatic resources....".* The project has four components concerning

- i) Ministry of Fisheries
- ii) Fisheries Management
- iii) Development of the production of fisheries produce and
- iv) Cross-cutting issues (concerning HIV/AIDS, governance gender equity and environmental sustainability).

The total resources envisaged for the Fisheries Sector Assistance Programme are estimated at US\$ 27.7 million of which US\$ 26.5 million are financed by NORAD, US\$ 2.5 million by ICEIDA and remainder by the Government of Mozambique.

Implementation means for this project will be via budgetary support and the intention is to transfer funds to the single treasury account, and manage implementation through an annual programme of agreed and costed measures (drawn through separate account headings for each implementing institution) with appropriate monitoring indicators. The programme should therefore be fully integrated within the single programming document of the Ministry of Fisheries and the Mid – Term Fiscal Framework of Government.

The four year programme was planned to start in 2009, but implementation has been delayed. The participation of ICEIDA in the programme is currently being reviewed by the Government of Iceland. Furthermore NORAD has expressed concern regarding the implementation arrangements since in the past the Ministry of Fisheries has experienced significant difficulties in disbursement of funds by the Ministry of Finance. NORAD has sought to strengthen budgetary planning management capacity of the Ministry to address this risk. The expectation is that the project will be launched in 2011.

**Table 15: Proposed future interventions in the fishery sector**

	Identification of project	Main details of project		Observations
No.	Item	Partners	Coordination	
1	Assistance to the Fisheries Sector in Mozambique	Norway, ICEIDA	Office of Minister	Under formulation Finance guaranteed
2	Support for coastal fishing in southern Mozambique (Maputo, Gaza, I'bane	WB, Japan	IDPPE	Finance guaranteed
3	Building of artisanal fishing market and support infrastructures in Maputo	JICA	IDPPE	Under discussion
4	Building of artisanal fishing infrastructures in C.Delgado, Nampula and Sofala	China	IDPPE	Finance not guaranteed
5	Establishment of assistance units in Gaza (Massingir) and Maputo (Mutanhana).	ICEIDA	IDPPE/FFP	Finance not guaranteed
6	Improved availability of ice for artisanal fishing in inland waters / <i>Concept Note</i>	TCP-FAO Junta Galicia	IDPPE	Finance not guaranteed Submitted 11.07
7	Development of fresh water aquaculture in southern Mozambique / <i>Concept Note</i>	TCP-FAO Junta Galicia	IIP	Finance not guaranteed Submitted 11.07
8	Establishment of ecology and water quality laboratory in IIP ( Concept note)	TCP-FAO Junta Galicia	IIP	Finance not guaranteed Submitted 11.07
9	Genetic study on marine prawns in Mozambique ( Concept note)	TCP-FAO Junta Galicia	IIP	Finance not guaranteed Submitted 11.07
10	Improved production from small scale fish farming	NEPAF	INAQUA	Finance not guaranteed
11	Technical assistance for establishing regional network for aquatic bio-security in Africa	FAO-TCP	INIP	Finance not guaranteed
12	Strengthened food security through improved quality of fisheries and aquaculture produce	DFID & UNDP	INIP	Under discussion
13	Training, selection and hiring of sailors at origin – FORPEX Project	Spain	EP	Under discussion
14	Rehabilitation of the industrial quay at the Maputo Fishing Port (Phase III)	JICA	DNAP & PPM	Finance not guaranteed Submitted in 2003
15	Reduction of the shrimp by-catch and changes in management of shrimp	GEF, UNEP & FAO	IIP	Approved. Under way ?

	fisheries in tropical countries (Regional proj.)			
16	Strengthening fisheries management capacity in ACP countries (Regional proj.)	EU/FFED	DNAP	Approved in 12/07
17	Development of fishing and aquaculture on Lake Niassa (Regional project)	WB/GEF		Under discussion
18	Safety at sea for small scale fishermen (regional project/SWIOFC)	SISA/Sweden	FAO	Under discussion
19	Institutional capacity building and training in rural development and aquaculture in Africa, through South – South cooperation	FAO, Japan	INAQUA	Finance not guaranteed Submitted 04/07
20	Coordination and implementation of agricultural research and training in the SADC region	EU/FFED	INAQUA	Finance not guaranteed Submitted 03/06
21	PROFISH – artisanal fisheries - MCS	WB		No information

#### INFORMATION ON THE REGIONAL PROJECTS

EC: Quality control in the ACP: total budget 40.8 million US\$ for about 60 ACP countries. Costs of the national sub-programmes not available.

SIDA: Support of SWIOFC; total budget 764,710 US\$, managed by FAO for 11 countries: Kenya, Reunion, Madagascar, Mauritius, Mozambique, Maldives, Tanzania, South Africa, Seychelles and Somalia.

GEF: Fisheries in the south-west Indian Ocean, Total value 22.7 million US\$. 8 beneficiary countries: Kenya, Mozambique, Madagascar, Mauritius, Tanzania, South Africa and Comoros.

Source: Assistance to the Fisheries Sector of Mozambique Document of the Programme co-financed by Norway and Iceland Final version January, 2009 Republic of Mozambique

### 3.10.5 Programming of donor interventions

Given the significant number of donor interventions, and the potential for overlaps with several semi-autonomous institutions launching and implementing development projects, all investment activities are subject to an annual single programming exercise, in which each of the main institutions with fiscal responsibility (Ministry of Fisheries, IDPPE, INIP, INAQUA and ADNAP IIP, FFP and EP) establish their costed interventions by thematic programme, identifying the relevant project name and number, and the source of finance (General state budget, or external source). This planning tool, reduces the potential for overlap and guides implementation. The funds programmed from the FPA are treated in the same way.

## 3.11 Fisheries Monitoring Control and Surveillance

### 3.11.1 Control environment

Mozambique has an extensive coastline of 2,780 km and the territorial waters and the EEZ surface is about 100,000 km<sup>2</sup>. Within the zone there are number of important fisheries elements where marine and onshore controls need to be implemented. These are:

- the Sofala bank (deep sea shrimp: from 1st of January to 31st of December; shallow waters shrimp from 31 of March to 31 of December)
- the Beira Bay (demersal species : from 1st of January to 31st of December) ;
- the Maputo Bay (demersal species) ;
- the EEZ North (tuna purse seiners engaged in tuna fishing : from March to May depending of the migratory shoals)
- the EEZ (long liners targeting tuna and swordfish mainly in the southern part of the EEZ: where they operate from May to November)
- the coast line (artisanal fisheries : all year round)
- the 5 ports suitable for semi-industrial and industrial fleet (Maputo ; Nocala ; Quilimane ; Angoche ; Beira)

Sofala bank, Beira bay and Maputo bay are the fishing grounds of the national fleet. Foreign vessels target the tuna and other large pelagics (swordfish and shark). Purse seiners operate under European flags (France; Spain; Italy), and Seychelles flag (with Spanish beneficial interests) and Mayotte flag (with French beneficial interest)<sup>28</sup>. Long liners are under European flags (Portugal, Spain and UK) and Asian countries flags (China, Japan and Korea). In the Mozambique Channel foreign purse seiners operate from March to May each year. The southern part of the Mozambique channel is also a fishing area all year round by foreign long liners.

The wide range of fisheries, fishing zones, fleets and métiers provides a significant challenge in the design, mobilisation and implementation of monitoring, control and surveillance activities. The Mozambique channel is shared between Madagascar, Comoros, Mozambique and France, and there are outstanding issues with regard to definition of the EEZs. The lack of certainty and the fact that the fishing zones overlap several jurisdictions creates a significant challenge for control authorities.

### 3.11.2 Institutional Framework for MCS

MCS is implemented under the umbrella of the Ministry of fisheries by ADNAP (Administração Nacional das Pescas). In recent years ADNAP has received a strong support from Norway through the MCS component of the NORAD project. This component has delivered technical assistance, capacity building, training of inspectors and funded the charter of a 27m patrol vessel Kuswag, formerly under RSA flag. It has also supplied a number of rigid inflatable boats with outboards for inshore coastal patrols.

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<sup>28</sup> From 31 March 2011, Mayotte ceased to be an Overseas Territory and became a department of France (following a referendum in 2009). Mayotte flagged vessels will therefore be included in the EU fleet register in the near future..

### 3.11.3 Fisheries MCS means

#### *Fisheries Monitoring Centre and Vessel Monitoring System*

ADNAP, with the NORAD technical assistance runs a Fisheries Monitoring Centre (FMC), which according to information from the Ministry of Fisheries is now fully operational. The FMC is manned by 3 officers, during 5 days a week, working hours only. It can only therefore provide limited coverage.

The FMC is equipped with radio communication (HF and VHF radio). It is also equipped with a satellite VMS system that ensures monitoring of the activities of licensed fishing vessels (semi-industrial, industrial and foreign flags). This system was delivered by the company Bluefinger in 2004. It was renewed and updated in 2009 by CLS. META software displays positions from transponders using INMARSAT, ARGOS and Iridium technologies. Software cartography includes the various fishing areas under specific management regime. The software is backed by databases that have been professionally designed.

By the end of 2010, 70 out of the approximate 123 industrial vessels in the Mozambican flagged fleet were equipped with satellite Vessel Monitoring System (VMS) transponders. This figure represents about 57% of the Mozambican industrial fishing fleet. Extension to the remainder of the industrial and semi-industrial fleet is therefore an important national priority, but the installation is limited by the lack of funds to subsidise the investment by vessel operators. ADNAP has indicated that this task will be completed during 2011. VMS transponders are compulsory for the foreign flags, and as far as can be ascertained all foreign flagged vessels comply with this requirement.

#### *Patrol vessels*

The NORAD project has supported ADNAP in the chartering of the patrol vessel “Kuswag”. Kuswag is a 27 m length former supply vessel, reconditioned for maritime patrol functions. The vessel is operated by Blue Water Marine Services under a wet charter-party (ie. with crew) at a cost of about EUR 4,000 /day (although it is not clear if this represents the cost when on patrol, in port, or an average of the two). The vessel carries on board an RIB for boarding, and is equipped for day and night operations. In 2010 it is reported that Kuswag has undertaken almost 200 days of patrols in the Mozambique zone. The duration of each patrol is about 8 to 10 days. The minimum requirement under the charter-party is 165 days/year at sea. The vessel is well maintained and manned. Its speed (less than 10 knots) and tonnage make her more suitable for coastal waters (max 24 nm) surveillance than for EEZ surveillance. Mozambique still therefore has only limited capacity for proper surveillance of the tuna fisheries. Mozambique intends to convert the Antillas Reefer into a patrol vessel, a Namibian flagged long liner confiscated for illegal fishing in the Mozambican EEZ in 2008, and still moored at Maputo. Converted as a patrol vessel, the operation of Antillas Reefer will allow patrolling to the full extent of the EEZ<sup>29</sup>.

The Ministry of Fisheries has no established protocols with the Navy nor the air force for joint surveillance patrols. The reported acquisition by the Navy/Coast Guard authorities of 5 modern patrol vessels from Spain has potential to allow a significant upgrading of MCS capacity, providing the operational and financial conditions can be resolved. There have been no regular air patrols. Mozambique does not use radar satellite image for MCS purpose.

#### *Fisheries Inspectors*

Inspections by ADNAP are carried out by a team of 60 inspectors with support from the NORAD Technical Assistance. All have been trained under the project to allow improved knowledge and MCS methodologies. From these 60 inspectors (located in the 5 main fishing ports), 28 are available to be engaged in sea patrols. Inspectors have written standard operation procedures; mission orders; uniforms and a set of technical guidelines which they

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<sup>29</sup> Source: [http://www.chathamhouse.org.uk/files/18373\\_130111castiano.pdf](http://www.chathamhouse.org.uk/files/18373_130111castiano.pdf)

carry with them. They also have dedicated equipment (Handset GPS, digital camera, phone and net gauges).

Most of the landings undertaken in Mozambican fishing ports by semi-industrial and industrial fishing vessels are subject to inspection. Inspectors may participate in the industrial fisheries and fishing vessels are obliged to take fishery inspectors onboard if requested by ADNAP. This activity should not be confused with the observers of the fisheries research institute (IIP) who cover various fisheries in the artisanal and industrial fisheries. In the case of the main fishery, the shrimp demersal fleet, observer coverage is expected to be limited due to the availability of staff (trip length is about 30 days). It should be noted that the IIP has the responsibility of producing artisanal catch statistics, which involves the implementation of a sampling programme which takes up considerable manpower resources.

ADNAP is in the process of strengthening its capacity for port state control, with NORAD support, including the recruitment of a specialist for continued training of fishery inspectors and the selection of a core team of inspectors to receive additional training to become qualified MCS instructors.

#### 3.11.4 Inspection and control procedures

Under the NORAD project, ADNAP has set up a new license application system. The new application form requires more information to be provided regarding vessel specifications and background. These data are checked by ADNAP. The RFMOs IUU databases are also checked to detect any previous IUU activity by the vessel applying for the license.

Before issuing the license, where feasible an inspection is carried on board to crosscheck information put in the form with the reality. No inspections have been undertaken on foreign vessels since until now, they rarely enter Mozambique ports. ADNAP intends to extend this requirement to EU and other foreign vessels in future.

Inspectors are empowered to inspect vessels (at any time, and any part of the ship; they have powers to require fishing gears to be hauled). They also have adequate powers to inspect markets, factories; trucks and retails.

When an offence is detected and a formal report made, ADNAP may choose to prosecute the case or to go through a settlement procedure. The Director of Fisheries for the national vessels chairs the settlement commission. The Minister of Fisheries chairs the commission of settlement in case of foreign involvement. In case of settlement, penalties are shared between the Fisheries Development Fund, the Ministry of Finance and ADNAP. Currently penalties start from EUR 11 to EUR 275 for artisanal fisheries; for industrial and semi-industrial it goes from EUR 2,300 to EUR 46,000; seizure and sale of the catches and ship is also a penalty available under the Law. One IUU vessel, the Antillas Reefer has been seized under this provision.

#### 3.11.5 MCS Activities and results

Data from ADNAP The level of sea patrol activities carried out is shown in Table 16 below, and overall inspection activities (including shore based) are shown in Table 17. Over the two years, 2008 and 2009, there were 360 days of patrol activity, which detected 185 offences. ADNAP reports that the majority of the infringements detected are by the semi-industrial fishing vessels.

**Table 16: Patrol vessel (PV Kuswag) activity and outcomes, 2008 and 2009**

	Days at sea	No. of Patrols	Ships monitored	Ships inspected	Offences detected
2008	210	23	103	71	12
2009	150	31	80	80	173

**Table 17: Inspector activity and outcomes, 2008 and 2009**

	Inspections	Offences detected	No. of Sanctions
2008	1,373	86	78
2009	1,869	173	113

### 3.11.6 Notification to Commission on IUU Regulation 1005/2008

Mozambique has notified the Commission of its institutions responsible for the implementation of the relevant functions defined in Council Regulation (EC) No 1005/2008 of 29 September 2008 establishing a Community system to prevent, deter and eliminate illegal, unreported and unregulated fishing. The notifications were submitted by the date of implementation of the Regulation, 1 January 2010. The nominated institutions are listed in Table 18.

**Table 18: List of institutions nominated by Mozambique with regard to implementation the IUU regulation 1005/2008**

Function (as defined in regulation 1005/2007)	Nominated Institute
Registration of fishing vessels under the flag of the Flag State;	National Marine Institute (INAMAR)
Granting, suspending and withdrawing licences to the fishing vessels of the Flag State;	National Directorate of Fisheries Administration
Attesting the veracity of the information provided in the catch certificates referred to in Article 12 and for validating such catch certificates;	National Directorate of Fisheries Administration
Control and enforcement of laws, regulations and conservation and management measures which must be complied with by fishing vessels;	National Directorate of Fisheries Administration
Verifications of catch certificates to assist the competent authorities of Member States through the administrative cooperation referred to in Article 20(4);	National Directorate of Fisheries Administration
Communication of a sample form of the catch certificate in accordance with the specimen in Annex II	National Directorate of Fisheries Administration
Updating the notifications	National Directorate of Fisheries Administration

### 3.11.7 Regional Collaboration on MCS

#### *Regional activities*

Mozambique Madagascar, Comoros, Mozambique and France have common interests in the Mozambique Channel and in terms of controls of purse seiners and long liners segments. The lack of certainty in definition of maritime boundaries and the fact that the fishing zones overlap several jurisdictions offers vessels breaching the national laws multiple possibilities to escape a unilateral inspection scheme. This suggests that a multilateral approach to control is indicated.

However, until now Mozambique has been slow to advance the regional integration of its MCS system. In particular it has not yet substantially taken the opportunity to participate in the EU funded project Regional Plan for Fisheries Surveillance (described in section 3.10.3), in which it is eligible to participate since it is an FPA partner country. The reason for this is that, as stated in the Joint Committee of September 2010 (point 3 of the agreed records): "...due to the fact that funds are already earmarked in the FPA sector matrix for surveillance activities, supplementary financial assistance cannot be granted under the Regional Plan for the time

being". As a result, the IOC charges Mozambique for the days spent at sea when regional missions patrol the Mozambique waters (with cost/day charged for the vessel). Mozambique also has to pay for its inspectors' travel when boarding the IOC patrol vessel at Madagascar or Comores etc.

A text for a Memorandum of Understanding which formalises these charges has been drafted and submitted by IOC. However the authorities of Mozambique have not yet signed since they consider that the conditions placed upon it, namely the billing of patrol days led by IOC in the Mozambican EEZ, and payment for the inspectors' transportation and accommodation costs are not acceptable. Mozambique is seeking to be considered as a "full" party to the IOC project with regional mission and inspector costs to be funded by the project.

As a result, until now the level of cooperation between Mozambique and the Regional Plan for Fisheries Surveillance is quite low. For the same reasons neither has Mozambique been able to benefit from financial support for national activities under Component 2 (concerning MCS) of the EDF funded ACP Fish II Programme, although it is able to participate in regional activities.

However, there are some promising steps towards a more effective integration. A mid term review of the RPFS project has recommended that Mozambique becomes a beneficiary of the project. Mozambique has applied to become a Cooperating Non-Contracting Party of the IOTC which opens the path to implementation of the IOTC observer programme under the SWIOFP (see below).

Furthermore the ACP Fish II is supporting a feasibility study on behalf of SADC regarding the founding of a Regional Fisheries MCS centre in Mozambique. The mission was launched in February 2011 and follows from the SADC ministerial meeting held in Victoria Falls in July 2010 which adopted the SADC Action Plan for IUU Fishing. This provides for the setting up of a regional MSC Centre, along with the decision of Mozambique being its hosting country.

The feasibility study aims to "provide SADC and member states with guidelines for the establishment of the Regional MCS Centre in order to prevent and combat IUU fishing in the region, facilitating cost-effective cooperation and coordination of MCS activities.". The mission will prepare an operational and financial plan identifying and outline steps to be performed for the installing and start up of the SADC regional MCS Centre.

Regional cooperation has also been developed with a successful trial on VMS data exchange between Seychelles and Mozambique. This may lead to data exchange (focused on tuna vessels) on a more regular basis. In 2009, the P/V Kuswag was charted for a joint mission with RSA under a SADC joint patrol. In the past, other joint patrols were carried on under SADC MCS project scheme with RSA, Tanzania and Kenya.

#### *Development of regional observer corps*

Under the auspices of the Southwest Indian Ocean Fisheries Project (SWIOFP), which is a GEF-funded project for the period 2007-2013, there are ongoing efforts to establish of a regional observer corps. In the case of pelagic fisheries, SWIOFP and IOTC are collaborating actively on issues such as data gathering, ecosystem monitoring and by-catches with a view to complement the work of the IOTC and to share information. SWIOFP has also adopted the IOTC observer protocol dealing with large pelagics for its observer programme.

A programme of observer training has been carried out successfully and 40 observers have been trained in the region, including 5 observers from Mozambique. These are staff of the Fisheries Research Institute – IIP. Observer deployment is expected to start in early 2011 after the setting up the SWIOFP observer programme in each of the member countries; Kenya, Tanzania (including Zanzibar), Mozambique, South Africa (eastern coast only), Madagascar, Mauritius, Seychelles, Comoros and France (by virtue of its islands in the region). Somalia has observer status.

A total of 50 observer days have been allocated to Mozambique by the SWIOFP, but there are considerable logistical problems to overcome in order to be able to place observers on tuna fishing vessels, as these do not visit Mozambican ports. The problems of piracy in the region have also made implementation more difficult, in particular for the tuna fisheries, there



has been less fishing activity and many foreign vessels have armed guards onboard. As a result the vessels owners have declined to take observers onboard due to limited space. It is likely that the amount of days earmarked for observer work will not be used in its totality.

The IOTC Commission adopted Resolution 09/04 on a Regional Observer Scheme in order to collect verified catch data and other scientific data related to the fisheries for tuna and tuna-like species in the IOTC area, as well as for bycatch. This was superseded by Resolution 10/04 on a Regional Observer Scheme (Appendix IV) that included modifications recommended from the Scientific Committee with regards to the implementation of the ROS in artisanal fleet. The Scheme is based on national implementation and should start on the 1st July 2010.

Whilst it should be noted that most of the initiatives are intended to create an observer programme which is focused on scientific data collection, there is also a potential control and enforcement role, for example in confirmation of logbook entries, and in the validation of catches (recording observations of actual quantities discharged on land or during transshipment). The creation of a regional observer corps, with cross authorisation of observers (so that observers from one participating state can be authorised to provide data on fisheries conducted in the waters of another) will overcome the problem of enduring adequate monitoring of vessels which do not visit port in that country.

### 3.12 SWOT Analysis of the Mozambique Fishery Sector

Marine Resources			
Strengths	Weaknesses	Opportunities	Threats
<p>Substantial EEZ with wide and productive continental shelf area fed by several large rivers; abundant and diverse fishery resource.</p> <p>Migratory resources of tuna and large pelagic fish e.g. skipjack and yellowfin in available within the EEZ</p> <p>Potential for increased exploitation of deepwater crustacean and small pelagic fisheries.</p> <p>Functional catch information system recently improved including data on bycatch and discards</p> <p>Fisheries research skills and knowledge developing in INIP.</p>	<p>Insufficient detailed knowledge of resource base</p> <p>Catches of some inshore demersal fish and crustacean stocks, and sharks likely to be significantly in excess of sustainable levels</p> <p>Lack of adequate assets and means to conduct meaningful research</p> <p>Fisheries management and research not strongly linked;</p> <p>Management system does not establish limits to catches or fishing effort in the artisanal fisheries.</p> <p>Mozambique is a member of SWIOFC for management of straddling and migratory stocks in EEZ of member states.</p> <p>Mozambique not a member of IOTC (RFMO for tunas and large pelagic fishes)</p>	<p>Strengthened MCS to control IUU fishing could result in improved resource conditions and yields for small scale and industrial fishers and increase in revenue for Government.</p> <p>Improved management of costal demersal and pelagic resources</p>	<p>Lack of effective and coordinated controls on national industrial and semi-industrial fishing effort undermines fisheries management</p> <p>Excessive exploitation results in collapse of some important inshore demersal fish stocks</p>

Institutional and Legal Framework			
Strengths	Weaknesses	Opportunities	Threats
<p>Fisheries is recognised as an important policy area and features strongly in the PARP II and Five Year Plan</p> <p>Well established single Ministry for Fisheries, adequately staffed with well qualified professionals and local presence in coastal areas</p> <p>Strong donor interest in fisheries sector, especially EC, IFAD, NORAD, DfID and World Bank</p> <p>Well established fisheries legislation in place, including foreign fishing: updated fisheries law expected to be introduced soon.</p> <p>Fisheries sector revenues generated and contribute to the national benefit; well defined and accountable mechanisms for receiving sectoral revenues into consolidated fund.</p> <p>Advanced budgetary management via single programming document.</p> <p>Stakeholder organisations founded for small scale fisheries; good record of stakeholder consultation</p>	<p>Under-disbursement of programmed finance undermines implementation of fisheries sector plans.</p> <p>Existence of semi-autonomous institutes and large number of donors/projects complicates investment and development programmes.</p> <p>Licensing of small scale fisheries not linked to fisheries management criteria</p> <p>Low salaries, conflicts of interest, and weak separation of policy and implementation functions undermines quality of decision making in fisheries management</p> <p>Non-membership of the IOTC; not bound to follow regional management recommendations</p>	<p>Improved budgetary management will generate returns through increased effectiveness of public investments</p> <p>New fisheries legislation will define fisheries management duties and powers more clearly, and increase penalties for non-compliance; should result in more effective fisheries management.</p>	<p>Sub-optimal financial, economic and social benefits from the sector.</p> <p>Inadequate governance and corruption continue to undermine institutional performance</p>

Monitoring, Control and Surveillance			
Strengths	Weaknesses	Opportunities	Threats
<p>Functional patrol vessels with regional bases, and modern VMS system in place</p> <p>Established corps of fishery observers</p> <p>Strong international support from donors (other than EC)</p> <p>Mozambique considered potential basis for SADC as regional MCS centre</p>	<p>No air patrol assets and no capacity to patrol to limits of EEZ; cooperation with international naval forces not focused on fisheries</p> <p>Fisheries MCS means are limited and are not well integrated with military services; penalties not commensurate with offences</p> <p>Acute lack of operational funding for fuel, consumables and spares etc.</p> <p>Low penalties and weak judicial system cannot respond adequately to punish offenders</p> <p>Presently limited participation in Sub-Regional MCS activity under IOC and Regional EU projects to strengthen fisheries MCS.</p> <p>No coherent approach to maritime security;</p>	<p>Investment and technical assistance (from donors) will consolidate and improve the MCS capacity through:</p> <ul style="list-style-type: none"> <li>Improved coordination of MoF with Navy and Airforce</li> <li>Further implementation of satellite VMS</li> <li>Participation in regional projects</li> </ul> <p>New naval patrol vessel investment reduce piracy and IUU fishing</p>	<p>Lack of operational budgets undermines MCS</p> <p>Mozambique remains excluded from important regional MCS initiatives</p>

Fishing Operations			
Strengths	Weaknesses	Opportunities	Threats
<p>Productive fisheries resource, substantially exploited by national fleets (artisanal industrial and semi-industrial)</p> <p>Strong national maritime heritage and boatbuilding and seamanship traditions; substantial numbers of skilled fishers (small scale and industrial)</p> <p>Stable weather conditions facilitates fishery activities</p> <p>Adequate local facilities for basic vessel servicing and repair</p>	<p>Lack of land-based infrastructure for small scale fisheries</p> <p>Most of industrial fleet foreign owned and catch frozen at sea; little national value added</p> <p>Lack of national capacity for fishing offshore (beyond continental shelf).</p> <p>High value fisheries (deepwater shrimp) highly sensitive to fuel costs and market prices.</p> <p>Weak capital base of most national fisheries enterprises and lack of credit limits investment capacity of the sector to exploit new fishing opportunities (eg. motorisation of small scale fishery, and small pelagic fish)</p> <p>Investment environment weak; private sector undermined by excessive bureaucracy, corruption, confused incentives, high transaction costs and weak financial and transport infrastructure.</p> <p>High fuel costs and taxes encourage offshore bunkering</p>	<p>Increased production from national surplus stocks (mainly pelagic and offshore resources)</p>	<p>Conflicts in the inshore zone between industrial and small scale fishers undermine fisheries livelihoods</p> <p>IUU fishing and lack of effective management undermine catch rates</p> <p>Lack of effective fisheries management undermines shrimp fishery, reduces catch rates and international competitiveness</p> <p>Lack of effective fisheries management in artisanal sector results in decline in catch rates</p> <p>High levels of HIV/AIDS in fishery sector threatens loss of skills base</p>

Marketing and Processing			
Strengths	Weaknesses	Opportunities	Threats
<p>Significant and growing market demand (national, regional and international) for products from national fisheries</p> <p>Strong tradition of small scale processing (smoking and drying) and trading throughout the region;</p> <p>Substantial participation of women brings strong societal benefits from the fishery</p> <p>Strong donor support and compliance with EC sanitary standards creates good environment for investment. Effective Competent Authority in place.</p> <p>Good processing facilities in place in strategic locations, up to international standards;</p>	<p>Insufficient dedicated fishing infrastructure at landing sites; poor road network; weak rural electricity infrastructure and water supplies results in high handling costs, poor quality and high post harvest losses from small scale fisheries.</p> <p>Small scale processing dependent on primitive, unhealthy and unsustainable technologies</p> <p>Weak purchasing power of rural consumers mitigates against investment in improved technologies</p> <p>Insufficient supply to meet national demand; draws in increasing low cost imports from neighbouring countries and SE Asia.</p>	<p>Strong economic growth in Southern Africa is increasing demand for fish, especially low cost products from national resources</p> <p>Donor support for improved access to domestic, regional and national markets through new infrastructure and compliance with sanitary requirements increases financial and economic benefits to all stakeholders</p> <p>Improved small scale technologies and management for fish processing and distribution result in more sustainable operations</p>	<p>Small scale fishers remain remote from international markets due to lack of infrastructure and non-compliance with sanitary standards</p> <p>Fish imports continue to increase as regional and international tariff barriers removed; including from EC under terms of EPA</p>

Inland fisheries and aquaculture			
Strengths	Weaknesses	Opportunities	Threats
<p>Substantial inland water resources provide basis for freshwater fisheries production</p> <p>Good environmental conditions and native species for aquaculture</p> <p>Strong national and international demand for fish</p> <p>Strong national and donor policy focus for development.</p>	<p>No clear development strategy for aquaculture.</p> <p>Weak skills and knowledge base at all levels; no capacity for adaptive research for development of aquaculture</p> <p>Existing aquaculture investments dependent on imported inputs.</p> <p>Lack of regulatory framework limits capacity for improved management and investment</p> <p>Inland lake fisheries sensitive environments susceptible to over-fishing.</p>	<p>Foreign investment in small scale commercial scale aquaculture and adapted technologies could contribute significantly to domestic and regional food supply, and poverty reduction</p>	<p>Government over- regulation and intervention may limit investment.</p> <p>High levels of exploitation in some lake fisheries; adoption of industrial fishing methods may lead to unsustainable catch rates.</p>

## 4 FISHERIES FOR HIGHLY MIGRATORY SPECIES IN THE INDIAN OCEAN

### 4.1 Industrial Purse Seine Fisheries

#### 4.1.1 Fleets

The purse seine fleet operating in the Indian Ocean is constituted mainly by European vessels (Spanish, French and Italian flags) and vessels under Spanish beneficial ownership flying the Seychelles flag. This includes also Spanish supply vessels which support the purse seine fisheries on FADs, thus increasing the efficiency and fishing power. These vessels are subject of regular monitoring by European (IRD and IEO) and Seychelles (SFA) research institutions, following the resolutions adopted by the IOTC. A profile of the purse seine fleet is shown in Table 19

**Table 19: Number of purse seiners by flag during the period from 1999 to 2008. Source : Pianet et al., 2009<sup>30</sup>**

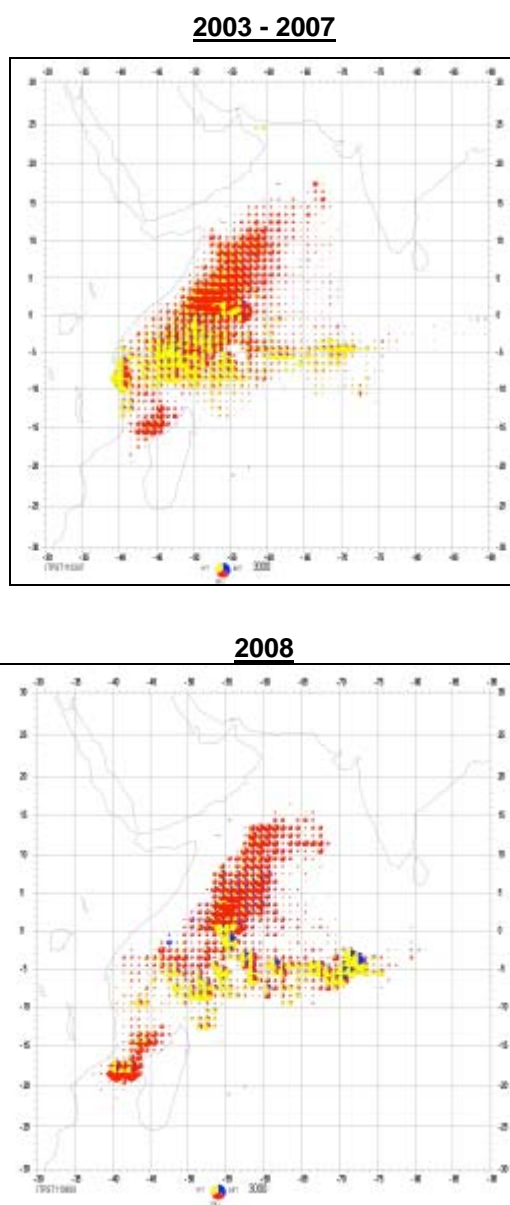
Year	European seiners			Total EU	Other flags					Total
	Spain	France	Italy		Antil. NL	Belize	Iran	Panama	Seychelles	
1999	20	15	1	36	4	4	1	2	5	52
2000	17	15	1	33	5	5	1	1	6	51
2001	17	19	1	37	4	5		1	10	57
2002	18	18	1	37	4		3	1	7	52
2003	18	14	1	33		1		1	11	50
2004	20	15	1	36	1		1	1	13	52
2005	20	16	1	37					11	48
2006	22	18	1	41					10	51
2007	21	19	1	41					10	51
2008	17	19	1	37					10	47

#### 4.1.2 Fishing areas

The following Figure 4 shows the spatial distribution of average annual catches for the period 2003-2007 and 2008. During the period 2003-2007, four areas of high purse seine activity are evident: the area off Somalia, west and east of Seychelles, the Mozambique Channel as well as off the Tanzanian coast. In 2008, unlike previous years, seiners did not fish off the coast of Tanzania and their activity was concentrated in west and east of Seychelles (between the equator and 10° S) and in the Mozambique Channel, which resulted in relatively higher catches of skipjack and yellowfin tuna. It is clear that the Mozambique channel provides an important fishing ground for this fleet segment. Fishing close to the coasts of Somalia and Tanzania also decreased in 2008 due to the effects of piracy in these areas.

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<sup>30</sup> Pianet, R., Delgado de Molina, A., Doriso, J., Dewals, P., Lucas, V., Norstrom, V., E., Ariz, J. 2009. Statistics of the main purse seine fleets fishing in the Indian Ocean, 1981-2008. IOTC-2010- WPTT-13



Source : Pianet et al, 2009

**Figure 4: Spatial distribution of purse seine catches during the period 2003-2007 and in 2008**

#### 4.1.3 Purse seine catches

##### *All purse seine fleets*

Since the beginning of the fishery in the early 1980s, catches by purse seiners operating in the Indian Ocean have generally increased until 2007 with a decline since then of varying importance depending on species. Since 2007, catches have been well below 300,000 tonnes per year, while in 2003 they exceeded 400,000 tonnes. Preliminary catches estimates for 2009 confirm the continuation of a lower level of catches (289,000 tonnes). Skipjack is the dominant species and represents an average of 50% of the catch over the past 10 years, followed by yellowfin (42%) and bigeye (7%). Catches of albacore remain small and often not recorded (less than 1%). It is worth noting the exceptional catches of yellowfin in 2003 and 2004, above 200,000 tonnes. Skipjack catches peaked in 2002 and in 2006, while bigeye catches peaked in 2002 and 2008 (Table 20).

**Table 20: Purse seine catches by species in the Indian Ocean.**

Year	Yellowfin tonnes (%)	Skipjack tonnes (%)	Bigeye tonnes (%)	Albacore tonnes	Total catch tonnes
1999	120,178 (37%)	168,950 (52%)	35,587 (11%)	541	326,087
2000	130,717 (39%)	170,793 (52%)	25,519 (8%)	1,162	330,970
2001	114,439 (39%)	156,929 (54%)	19,482 (7%)	1,231	292,605
2002	130,187 (35%)	212,173 (57%)	26,943 (7%)	703	375,386
2003	200,469 (49%)	184,419 (45%)	19,626 (5%)	1,484	406,386
2004	206,146 (56%)	137,906 (38%)	19,641 (5%)	235	364,447
2005	175,534 (45%)	187,944 (49%)	22,140 (6%)	169	386,635
2006	147,884 (38%)	220,887 (56%)	19,490 (5%)	1,360	390,595
2007	93,023 (37%)	132,317 (53%)	21,205 (9%)	714	247,552
2008	112,132 (41%)	134,133 (49%)	26,445 (10%)	1,390	274,415

Source: Pianet et al, 2009

A major part of purse seine catches, 70%, are taken in association with FADs. Fonteneau (2003) notes that this percentage is the highest that has ever been observed in the world, and that catches on FADs have been increasing steadily and significantly in the Indian Ocean since 1989, unlike catches taken on free schools which vary from year to year without showing clear trends.

#### *EU Purse seine catches*

This section presents data concerning Spanish and French purse seine fleets only, as detailed data is not available on the activity of the one Italian purse seiner operating in the Indian Ocean (which subsequently re-flagged in 2010 under the French fleet to gain the benefit of military protection). During the period 1999-2008, European purse seine catches in the western Indian Ocean have been an average of 244,433 tonnes annually; 151,433 tonnes for the Spanish fleet and 92,999 tonnes for the French on average (Table 21). The EU fleet has accounted for between 68 and 76 %of the total catches of these species, as shown in Table 21.

Concerning the breakdown of catches by species, French vessels landed relatively more yellowfin (48%) and less skipjack (44%) than Spanish vessels (39% and 53%, respectively) over the period 1999-2008. The proportion of bigeye landed by the two fleets is equivalent (7%). Note the significant higher total catch in 2005 and 2006 compared to previous years, which was due to higher catches of skipjack tuna primarily.

When considering fishing method, the majority of the catches are taken in association with FADs (69% by Spanish vessels and 57% by French vessels). Skipjack and bigeye tuna are mostly caught on FADs: 86% and 77%, respectively, by the Spanish fleet while these proportions are lower for the French fleet, 81% and 70%, respectively. On the other hand, catches of yellowfin tuna by fishing method differ substantially between the two fleets, where an important part of Spanish purse seine catches are taken on FADs (45%), while most of French catches are taken from free schools (70%). Catches of albacore are generally low whether by fishing on FADs or free schools.

Fishing strategy differs between the two fleets, where the Spanish fleet focuses on fishing FADs, the main target species being skipjack, while the main target of the French fleet is yellowfin. Thus, the Spanish fleet includes a number of supply vessels with the function of deploying FADs and following their movements using GPS, monitoring the presence of tuna by echo sounder and communicating data to purse seiners.



**Table 21: EU purse seine catches by species in the Indian Ocean.**

	Total EU catches		Total All Countries Catches	Catches by EU vessels	Yellowfin				Skipjack				Bigeye				Albacore	
	ESP	FR			tonnes	%	ESP		FR		ESP		FR		ESP	FR		
	tonnes						tonnes	%	tonnes	%	tonnes	%	tonnes	%	tonnes			
1999	142,426	82,135	326,087	69	51,875	36	30,799	37	74,285	52	42,665	52	16,034	11	8,517	10	232	154
2000	140,872	84,824	330,970	68	52,070	37	37,694	44	77,187	55	39,935	47	10,769	8	6,673	8	410	350
2001	124,389	76,624	292,605	69	47,571	38	34,077	44	68,346	55	36,261	47	7,930	6	5,453	7	339	660
2002	156,386	98,461	375,386	68	53,205	34	36,399	37	91,462	58	54,357	55	11,096	7	7,325	7	217	264
2003	176,200	108,157	406,386	70	78,968	45	63,281	59	88,035	50	38,902	36	8,544	5	5,335	5	520	608
2004	154,106	107,441	364,447	72	80,810	52	63,521	59	64,393	42	37,972	35	8,634	6	5,813	5	76	77
2005	182,562	107,140	386,635	75	77,519	42	57,218	53	94,312	52	43,171	40	10,290	6	6,481	6	48	86
2006	200,543	101,810	390,595	77	70,924	35	45,200	44	118,857	59	50,033	49	9,952	5	5,437	5	428	850
2007	112,848	78,670	247,552	77	37,763	33	36,523	46	65,006	58	34,892	44	9,756	9	6,887	9	246	335
2008	124,004	85,036	274,415	76	46,051	37	42,101	50	65,096	52	34,337	40	12,490	10	7,609	9	299	980

Source : Pianet et al, 2009

It should be noted that fishing method has an important effect on the size of tuna caught. Considering Spanish data for the period 1999-2008, yellowfin and bigeye tuna caught on FADs are generally small in size (4.8 kg and 4.2 kg respectively), while much larger individuals are taken in free schools (32.7 kg and 25 kg respectively). Most of the bigeye tuna caught on FADs are thus juveniles (IOTC<sup>31</sup>), but it should be noted that the current status of the stock is considered to be healthy (see section 4.3.3). There is also a difference between sizes of skipjack caught on FADs or free schools (2.6 kg and 3.3 kg), although this difference is much smaller. Data on sizes of tuna caught by the French fleet are generally very similar.

## 4.2 Industrial Longline Fisheries in the Indian Ocean

### 4.2.1 Fleets

There are distant-water fishing fleets from about a dozen nations operating in the western Indian Ocean, with at least 420 vessels operational in 2009. This included EU flagged vessels, Asian fleets (Taiwan, Japan, South Korea, Philippines, China) vessels from the Seychelles involving Asian interests, vessels flying flags of convenience (Belize, Honduras, Equatorial Guinea, Panama<sup>1</sup>) as well as various vessels flying different flags and not reporting their activity, which are accounted for as NEI (Not Elsewhere Included) in IOTC fisheries statistics.

Asian longline fleets (Taiwan, Japan and South Korea), account for about 75% of the total recorded production of longline fisheries in the western Indian Ocean. The characteristics of Asian longline fleets operating in the Indian Ocean vary between fleets and within fleets of the same flag. There is wide variation in vessel size and capacity as well as equipment for freezing and storage on-board. Many of the vessels are old and the fleets are composed of several generations of vessels, which have evolved differently according to target species as well as changing market conditions.

The Taiwanese fleet is by far the largest longline fleet in the Indian Ocean, both in terms of vessel numbers as well as size and equipment. These can be divided into two major longline fleets. One is an industrial fleet with vessels exceeding 500 GRT, targeting bigeye and yellowfin tuna, which are usually freezer vessels. There has been a sharp decline in the number of the Taiwanese industrial longline vessels operating due to a vessel de-commissioning scheme which resulted in the withdrawal of 107 vessels between 2005 and 2006 (IOTC SC<sup>32</sup>). Now only about 180 vessels operate. A second fleet of smaller vessels also operates in the Indian Ocean (characterised by deficient data on fishing activity). The Japanese fleet is composed of vessels ranging from 120 to 500 GRT. The fleet comprised about 200 vessels for a long period. The number of active vessels increased to 249 in 2007, then decreased to 172 vessels in 2008 and 127 vessels in 2009, a historical low.<sup>33</sup> There is also a small fleet of Japanese purse seiners operating in the eastern Indian Ocean (3 vessels in 2007 to 2 vessels in 2009). The Korean longline fleet in the Indian Ocean reached its peak in 1975 with 185 vessels operating, but this has decreased gradually down to 24 active vessels in 2008 and 21 in 2009. The tonnage of these vessels is between 201 and 500 GRT<sup>34</sup>. China started longline fishing in the Indian Ocean in 1995. Fleet size has decreased from 67 operating vessels in 2006 to 32 vessels in 2009<sup>35</sup>.

European longliners operating in the western Indian Ocean are fewer and much smaller in size compared to Asian longliners. The French fleet operates from its base in La Reunion. This fishery began in 1991 and consisted of 43 active vessels in 2009, which are relatively small in size, not exceeding 22 meters (28 above 28m and 15 below 16m)<sup>36</sup>.

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<sup>31</sup> Report of the Scientific Committee of the IOTC (13th Session, Dec. 2010)

<sup>32</sup> Review of Taiwanese tuna longline fisheries in the IO 2009. IOTC-2009-SC-Inf25

<sup>33</sup> National Report of Japan 2010. IOTC-2010-SC-Inf11

<sup>34</sup> National Report of Korea 2010. IOTC-2010-SC-Inf14

<sup>35</sup> National Report of China 2010. IOTC-2010-SC-Inf07

<sup>36</sup> European Union Report to the IOTC SC 2010. IOTC-2010-SC-Inf05

**Table 22: Number of French longliners operating in the Indian Ocean 2003-2007**

	Vessels < 16 m	Vessels > 16 m	Total
2003	27	6	33
2004	24	6	30
2005	26	10	36
2006	29	10	39
2007	29	16	45
2008	31	15	46
2009	28	15	43

Spanish longline vessels have been operating in the Indian Ocean since 1993, reaching 28 units in 2006, but this decreased to 15 vessels in 2009<sup>37</sup>. There are also a few active vessels under the United Kingdom flag (3 vessels in 2009) in the Indian Ocean. The Portuguese fleet has also decreased from a level of about 16 active vessels in 2006 to 3 active vessels in the Indian Ocean in 2009.

#### 4.2.2 Fishing Areas

Asian fleets primarily target major tunas: yellowfin tuna (*Thunnus albacares*), albacore (*Thunnus alalunga*), bigeye tuna (*Thunnus obesus*) and southern bluefin tuna (*Thunnus maccoyii*). In contrast, swordfish (*Xiphias gladius*) is the main target of European longliners as well as sharks as secondary targets (mostly blue and mako sharks). Thus, fishing area varies considerably depending on fleets and target species.

Maps showing spatial distribution of some of the Asian fleet activities are shown in Annex 4.

Taiwanese longline vessels operate mostly in the northern part of the western Indian Ocean. There has been a trend for increasing concentration of fishing activity in the Somali Basin in recent years with a distinct fishing area in the southwest Indian Ocean (for albacore) in previous years (e.g. early 2000s).

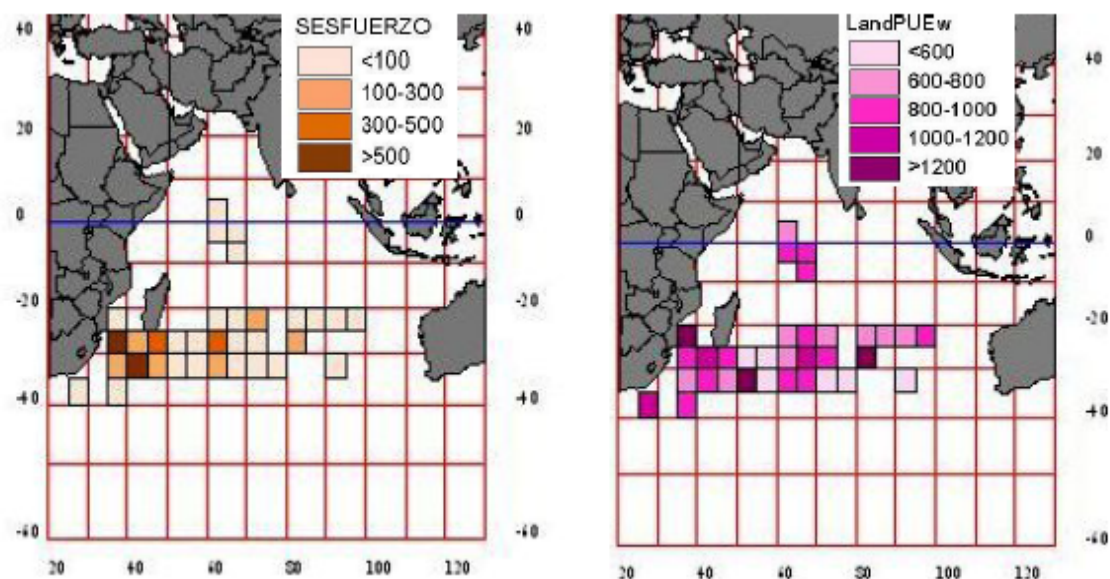
The Japanese fleet operates in the entire Indian Ocean. In the western part, the main fishing areas are found in tropical waters off the Somali coast and in the Mozambique Channel, and in the temperate waters of the southern hemisphere, down to 40° S.

The activity of Korean longliners is concentrated in the western Indian Ocean, including fishing areas off the coast of Mozambique in the Mozambique Channel, off Somalis and Oman.

In relation to European longliners, Spanish fishing activity takes place in a crescent shaped area extending from 20° - 40° S and 40° - 110° E and in the area of the Seychelles to a lesser extent. Figure 5 shows that the most important area for these vessels is to the South of Madagascar off the coast of Mozambique and South Africa.

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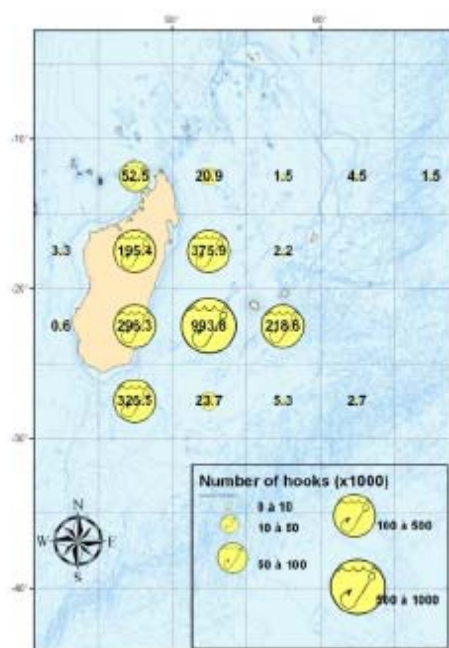
<sup>37</sup> European Union Report to the IOTC SC 2010. IOTC-2010-SC-Inf05



Source : European Union Report to the IOTC SC 2010. IOTC-2010-SC-Inf05

**Figure 5 :** *Distribution of the annual nominal effort (thousands hooks) (left) and nominal CPUEw in kg (round weight) of swordfish landed per thousand hooks set (right) by 5°x5° degrees, carried out by the Spanish surface longline fleet in the Indian Ocean during the year 2009*

The Reunion based longline fleet began fishing in the French EEZ. Subsequently, larger vessels were commissioned and these began fishing in foreign EEZs, including the Malagasy EEZ which constitutes an important fishing ground for these vessels. Figure 6 suggest that the French surface longline vessels do not operate in the Mozambique zone preferring to operate mostly to the East of Madagascar.



Source : European Union Report to the IOTC SC 2010. IOTC-2010-SC-Inf05

**Figure 6:** *Spatial distribution of French Reunion longliners (in thousand set hooks) in 2008.*

### 4.2.3 Longline Catches

Table 23 shows total catches of longliners in the western Indian Ocean for the period 2000-2008, have been an average 166,000 tonnes annually. Asian fleets (Taiwan, Japan, Korea, China) accounted for 75% of the total catch. European catches are fairly modest at about 7,300 tonnes, or 4% of total catches. However, in recent years, as shown in Table 24, average catches by the EU have been in the range of 12,000 to 16,000 tonnes a year overall for highly migratory species, whilst catches by Asian vessels has declined. Since 2007 therefore the EU vessels being responsible for about 15% of the catch.

There are significant differences in the species composition of catches for each fleet, which is based on differences in fishing strategy: target species, fishing area, and fishing techniques. For Asian longliners, tuna are the main targets and dominate the catches, although in different proportions depending on fleet. Bigeye and yellowfin tuna are the main species caught by Asian fleets. Albacore and swordfish are nonetheless also important components of Taiwanese longline catches, while catches of southern bluefin tuna are an important component in catches of Japanese longliners. Regarding European longliners, catches of swordfish largely exceed those of major tuna (bigeye, yellowfin and albacore) which are however not insignificant.

**Table 23: Annual catches (average 2000-2008) of major longline fleets in the western Indian Ocean. Source: IOTC databases**

Flag	Yellowfin	Bigeye	Skipjack	Albacore	S.Bluefin	Swordfish	Others	Total	%
Taiwan	22,429	34,083	33	10,066	422	8,357	3,558	78,949	47
Japan	16,547	8,860	6	3,033	1,928	1,204	986	32,563	20
China	2,103	4,743	0	42	0	438	221	7,548	5
Seychelles	2,274	3,534	0	447	49	869	191	7,364	4
NEI	1,710	2,498	12	1,252	7	1,191	309	6,979	4
Korea	2,087	1,601	0	96	273	130	134	4,321	3
Philippines	1,031	1,140	0	50	44	136	5	2,406	1
EU including:	521	485	5	804	18	5,183	273	7,291	4
- Spain	70	159	3	290	6	2,970	69	3,568	2
- FR La Réunion	432	318	0	507	0	1,105	105	2,467	1
- Portugal	19	6	2	4	10	883	51	975	0
- UK	0	2	0	3	2	225	48	281	0
TOTAL Indian Ocean	55,791	62,357	74	17,967	2,792	20,956	6,576	166,513	

**Table 24: Average total catches by longliners in Western Indian ocean, 2007-2009**

Sum of Total		Year			
Group	Country	2007	2008	2009	avg
Non-EU	China	9,977	6,627	3,805	6,803
	Japan	39,695	24,845	12,485	25,675
	Korea, Republic of	5,860	2,235	1,811	3,302
	Seychelles	10,253	5,847	7,137	7,746
	Taiwan,China	55,331	38,312	43,460	45,701
	NEI	7,133	5,991	5,304	6,143
	Total	128,250	83,858	74,002	95,370
EU	France-Reunion	3,494	2,600	2,600	2,898
	Portugal	2,739	912	929	1,527
	Spain	9,513	7,747	6,840	8,033
	United Kingdom	760	2,027	1,638	1,475
	Total	16,505	13,286	12,006	13,932
Grand Total		144,755	97,144	86,007	109,302

Source: IOTC databases

## 4.3 Status and management of target stocks

### 4.3.1 Role of the Indian Ocean Tuna Commission

The Indian Ocean Tuna Commission (IOTC) is an intergovernmental organization set up under Article XIV of FAO mandated to manage tuna and tuna-like species in the Indian Ocean and adjacent seas. Its objective is to promote cooperation among its Members with a view to ensuring, through appropriate management, the conservation and optimum utilisation of stocks and encouraging sustainable development of fisheries based on such stocks. It was established in 1991, and 28 Members, including the EU.

IOTC has established numerous management measures applicable to large pelagic fish stocks in the Indian Ocean. Members are obliged under the terms of their membership to ensure that their fleets comply with these measures. Several countries are also associated with IOTC as “Cooperating Non Contracting Parties”, under the terms of which they also agree to implement management measures, and may participate in IOTC meetings, whilst not having rights to vote on the adoption of measures.

The following presents the status of fish stocks relevant to the fisheries in the Mozambique zone, and is based on the most recent report of the Scientific Committee of the IOTC (13th Session, Dec. 2010) and other working papers presented by tuna scientists. Also, the management advice provided by the IOTC is reviewed by the Scientific, Technical and Economic Committee for Fisheries (STECF) of the European Commission. In some cases, specific comments or possible additional recommendations are given by STECF, referring to the latest report on review of advice for 2011.

### 4.3.2 Yellowfin tuna (YFT), *Thunnus albacares*

Yellowfin tuna (*Thunnus albacares*) is a cosmopolitan species distributed mainly in the tropical and subtropical oceanic waters of the three major oceans, where it forms large schools. The sizes exploited in the Indian Ocean range from 30 cm to 180 cm fork length. Smaller fish (juveniles) form mixed schools with skipjack and juvenile bigeye tuna and are mainly limited to surface tropical waters, while larger fish are found in surface and sub-surface waters. Intermediate aged yellowfin are seldom taken in the industrial fisheries, but are abundant in some artisanal fisheries, mainly in the Arabian Sea.

Recent results of a tagging programme<sup>38</sup> has provided evidence of large movements by yellowfin tuna, which supports the common assumption of a single stock in the Indian Ocean. However, the main fishing grounds are in the western equatorial part, where most of the catches are north of 10° S and in the Mozambique Channel (north of 25° S). It is important to note that there has been a progressive development of fisheries on FADs (also called fisheries on logs) in the purse seine fishery since the mid-1990s, which has resulted in increased catches of juvenile yellowfin tuna. At the same time, the artisanal catches have also increased significantly.

The fisheries in the Indian Ocean are distinct from other oceans in that artisanal fisheries using gears such as pole and line, driftnet and hand line are substantial, contributing 35 % of the total YFT catches during recent years (2000-2008). Total annual catches have increased steadily since the start of the fishery in the late 1950s, peaking at 511,200 tonnes in 2004. Yellowfin catches in the Indian Ocean during 2003 to 2006 were much higher than in previous years (an average catch of 466,000 tonnes) but have since returned to a lower level in 2007-2008 (318,000 tonnes). These recent changes in catches are thought to be due to changes in concentration across area and depth ranges (i.e. due to environmental conditions). Estimated catch of yellowfin was 288,100 tonnes in 2009.

Assessing the status of the YFT stock in the Indian Ocean is difficult due to aspects such as; a) conflicting CPUE trends, b) uncertainty regarding natural mortality and c) limited data on spatial aspects of movement. The approach used by the IOTC SC is the comparative application of various assessment models, which are based on different assumptions, thus contrasting the results under different assumptions. In 2010, this included analytical models, with and without spatial modelling, as well as a simple surplus production model.

Some general results are that the effect of the high 2003-2006 catches on the stock biomass is now apparent, and there appears to have been lower than average recruitment in recent years, which is limiting YFT recovery despite the recent decrease in effort in the purse seine fishery. Although estimation of future recruitment is extremely difficult given the information currently available, analyses of environmental conditions in the Indian Ocean appear to provide credible explanations for lower recruitment estimated by the model.<sup>39</sup>

Based on these results, the IOTC SC considers that the stock of yellowfin has recently been overexploited and is probably still being overfished. MSY is estimated at 300,000 tonnes which is lower than the average catches sustained over the 1992-2002 period of around 343,000 tonnes. Management advice states that catches of yellowfin tuna should not exceed the estimated MSY of 300,000 tonnes. Current catches are considered to be within this limit. However a closer monitoring of the stock situation is recommended.

#### 4.3.3 Bigeye tuna (BET), *Thunnus obesus*

Bigeye tuna (*Thunnus obesus*) inhabit the tropical and subtropical waters of the Pacific, Atlantic and Indian Oceans in waters down to around 300 m. Juveniles frequently school at the surface underneath floating objects with yellowfin and skipjack tunas. Association with floating objects appears less common as bigeye grow older. Of the three major tropical tuna, bigeye tuna has a longer lifespan of more than 10 years, which makes the stock much more sensitive to fishing pressure compared to yellowfin and skipjack tunas.

The tuna tagging programme described above has provided evidence of large movements by bigeye tuna, which supports the assumption commonly used of a single stock in the Indian Ocean. The major fishing grounds are in the western equatorial waters, but there are significant catches in the eastern by smaller longliners.

Bigeye tuna is predominantly caught by industrial (long line and purse seine) and occasionally by artisanal fisheries. Longline fisheries started to target bigeye in the 1970s (for the sashimi market) and mainly catch adults (>80 cm). There was a rapid development of the purse seine fisheries during the 1990s in association with drifting and floating FADs, which resulted in the increased catch of smaller bigeye (<80 cm). Reported total catches in the Indian Ocean of bigeye tuna peaked during 1997-99 at

<sup>38</sup> Indian Ocean Regional Tuna Tagging Programme funded under the 9<sup>th</sup> EDF, and implemented by the IOC under the supervision of IOTC

<sup>39</sup> Report of the Scientific Committee of the IOTC (13th Session, Dec. 2010)



144-150,000 tonnes per year. Total annual catches averaged 121,700 tonnes over the period 2004 to 2008. The catch in 2009 was estimated to be 102,200 tonnes.

In 2010, assessment of the bigeye stock was carried out using an analytical model which attempted to take into account uncertainty associated with key parameters (i.e. indices of abundance, natural mortality, growth). The results were consistent with the previous assessment (2009) indicating that stock status is healthy and not subject to overfishing. MSY was estimated to be 114,000 tonnes. The IOTC SC advice recommends that catches should be kept at or below 102,000 tonnes, which was the level of 2009 catches. It should however be noted that this advice is associated with uncertainty which is expressed by a possible range of values for MSY (as shown in Table 25).

The STECF agrees with IOTC management advice but places further emphasis on the need to keep catch and effort under strict control, as well as reducing catches of juveniles<sup>40</sup>.

#### 4.3.4 Skipjack (SKJ) *Katsuwonus pelamis*

Skipjack tuna (*Katsuwonus pelamis*) is a cosmopolitan species found in the tropical and subtropical waters of the three oceans. It generally forms large schools, often in association with other tunas of similar size such as juveniles of yellowfin and bigeye. Skipjack exhibits characteristics that result in a higher productivity when compared to other tuna species. Tagging studies show that skipjack is highly mobile and can move great distance, thus supporting the hypothesis of a single stock in the Indian Ocean. This species is also characterised by high fecundity, and spawns opportunistically throughout the year in the whole inter-equatorial Indian Ocean (north of 20°S, with surface temperature greater than 24°C) when conditions are favourable. Because of the above characteristics, skipjack tuna stocks are considered to be resilient and not prone to overfishing.

Skipjack is a tropical and subtropical species that forms large schools usually mixed with other tunas of similar size, such as yellowfin and bigeye tuna juveniles. Catches taken in association with objects (FADs or logs) by purse seiners are dominated by skipjack, representing 60-70% of the total catch.

Contrary to the situation in other oceans, the artisanal fishery component in the Indian Ocean (mainly using pole and line, driftnet and hand line) is substantial, taking between 55 and 60 % of the total skipjack catches during recent years (2000-2008). Catches increased rapidly with the arrival of the purse seiners in the early 1980s, and skipjack became one of the most important tuna species in the Indian Ocean. The annual total catches exceeded 400,000 tonnes in the late 1990's and the average annual catch for the period from 2002 to 2006 was 514,100 tonnes (catches in 2006 may have been the highest reported in the history of the fishery 596,200 tonnes). The trend in catches is due to an expansion of the FAD-associated fishery, in particular, and the expansion of gillnet and baitboat fishery. Catches averaged 499,900t over the period 2004 to 2008. Estimated catch in 2009 was 440,600 t.

IOTC estimates that 30 to 40 % of the total catch of skipjack is taken in gillnet fisheries (mainly from Sri Lanka, Iran, Pakistan, India and Indonesia); another 30-40 % in purse seiners and around 20 % in baitboat fishery. It should be noted that the purse seine fishery is multi-specific where large numbers of juvenile bigeye and yellowfin tuna are caught by the seine, although targeting skipjack, when fishing on FADs.

Although no quantitative assessment of the skipjack stock is available, the Scientific Committee of the IOTC uses stock indicators to infer about the status of the stock; a) catches of skipjack continue to increase with increasing effort and b) the catch is composed mostly by sexually mature fish, indicating that they have already spawned. Thus, the skipjack stock is considered to be in a healthy state and it is not being overfished. Conversely, the IOTC SC also notes that, although there may be no reason for immediate concern, catches cannot be expected to increase at the current rate indefinitely. Therefore, it recommends that skipjack be monitored regularly.

#### 4.3.5 Swordfish (SWO), *Xiphias gladius*

Swordfish (*Xiphias gladius*) is a large oceanic apex predator that inhabits all the world's oceans and in the Indian Ocean ranges from the northern coastal state down to southern waters (50°S). Swordfish

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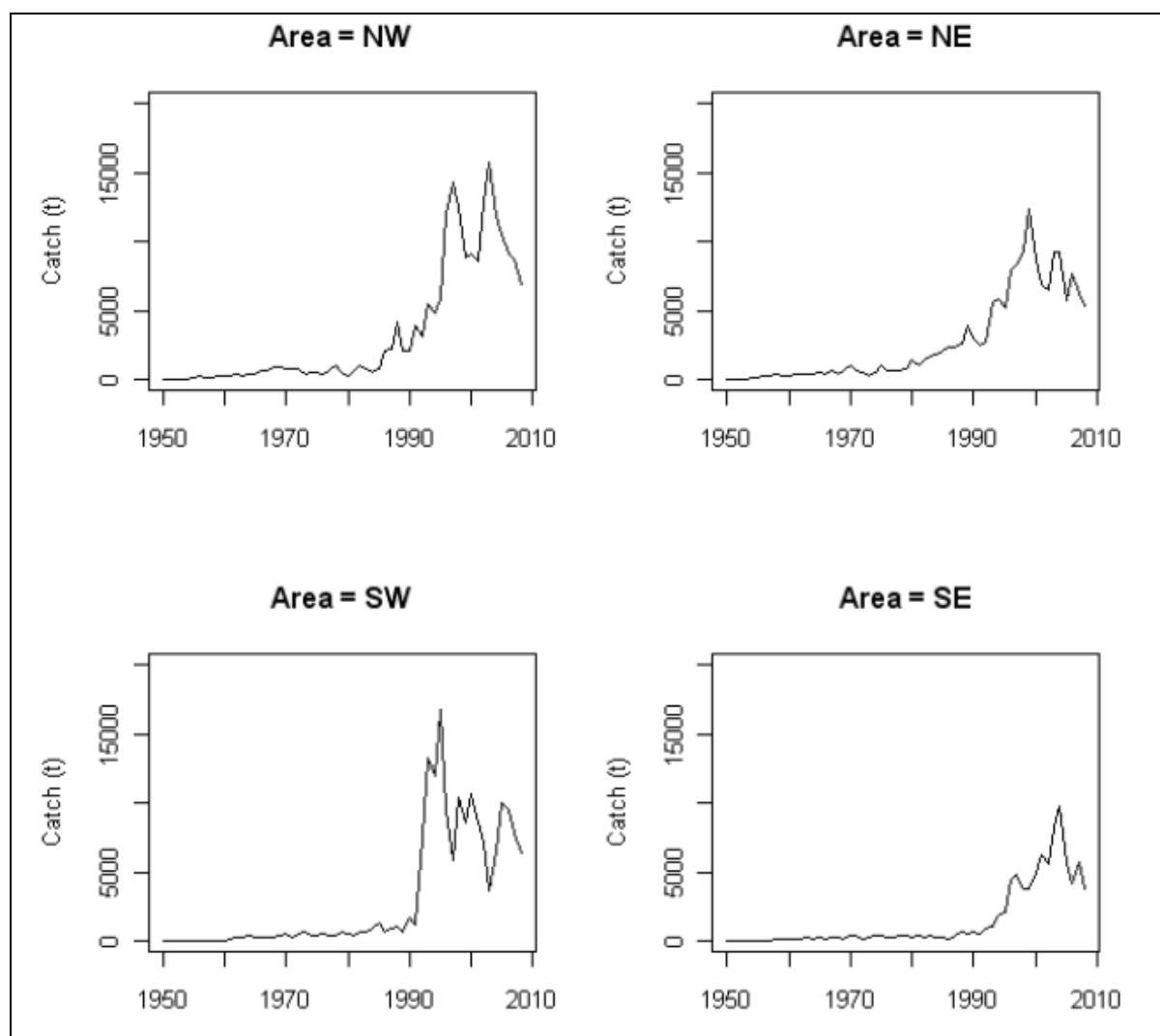
<sup>40</sup> STECF 2010. Review of Scientific Advice for 2011. Compilation of the reports of the STECF-SGRST 10-01, 10-02 and 10.03 stock review meetings and incorporating amendments, addenda and corrigenda.

are known to undertake extensive diurnal vertical migrations, from surface waters during the night to depths of 1,000 m during the day, in association with movements of the deep scattering layer and cephalopods, their preferred prey. By contrast with tunas, swordfish is not a gregarious species, although densities increase in areas of oceanic fronts and seamounts.

There are indications of there being more than one stock in the Indian Ocean (e.g. from genetic studies, spatial differences in CPUE), but the common assumption of a single stock is maintained for management purposes while this is resolved (IOTC SC, 2010).

As with many species of billfish, swordfish exhibit sexual dimorphism; females reaching larger sizes, growing faster and maturing later than males. Females mature at about 170 cm (maxillary-fork length = LJFL) while this is 120 cm for males. Swordfish are highly fecund, batch spawners with large females producing many millions of eggs per spawning event, and they are long-lived with a maximum age of more than 30 years. These life history characteristics of relatively late maturity, long life and sexual dimorphism make swordfish vulnerable to over exploitation.

The main gears catching swordfish in the Indian Ocean are drifting longlines (95%) and gillnets (5%). Before the 1990s, swordfish was considered by-catch in the industrial longline fisheries, but a strong increase was observed after 1990, reaching peaks of around 35,000 tonnes in 1998 and 36,000 tonnes in 2003 and 2004. This increase in catch is attributed to a change in target species from tunas to swordfish by part of the Taiwanese fleet, the development of longline fisheries in Australia, La Reunion, Seychelles and Mauritius targeting swordfish, and the arrival of longline fleets from the Atlantic Ocean (Portugal, Spain and other fleets operating under various flags) also targeting swordfish. Catches have decreased from an average of 29,900 tonnes over the period 2004-2008 and to an estimated 22,100 tonnes in 2009 (see Figure 7). The decrease is assumed to be due to changes in demand, and not to be due to overfishing.



Source: IOTC-2010-WPB-05).

**Figure 7: Total swordfish estimated catches taken by area in the Indian Ocean.**

The largest catches are obtained in the south-western Indian Ocean. By-catches and discards (mainly sharks and billfish) are important in these fisheries. While the data for this stock are improving with time, major gaps remain, particularly gaps in the time series, under-reporting of discards, lack of size-frequency data as well as problems with aggregation and misidentification. Nevertheless the level of exploitation of the overall stock appears to be within sustainable levels, suggesting that the state of the swordfish stock (assuming a single stock) is healthy and catch levels are sustainable.

However, there is some evidence that there is a sub-population of swordfish in the south-western Indian Ocean and IOTC SC has taken into account by assessing the stock as one for the whole Indian Ocean and separate assessment, considering the possible existence of a sub-stock in the SW Indian Ocean<sup>41</sup>. Preliminary results have indicated that this sub-population has experienced overfishing for several recent years, but recent declines in catch and effort may have brought the fishing mortality down to sustainable levels, albeit this is still uncertain (due to conflicting CPUE series, size data, etc)..

<sup>41</sup> IOTC-2010-WPB-05 - Spatial stock assessment on swordfish showing possible sub-population in SWIO. Report of the Scientific Committee of the IOTC (13th Session, Dec. 2010)

Based on these assessments, the Scientific Committee of IOTC has indicated that there is probably no urgent need to introduce restrictive management actions to the Indian Ocean as a whole, if the recent declines in effort continue and catch remains substantially below the estimated MSY of 29,000 tonnes. However, continued monitoring is required to manage the uncertainty.

Given the possibility that there may be an overfished sub-population in the southwest Indian Ocean, the Scientific Committee has advised that catches in the SW should be maintained at levels at or below those observed in 2008 (6,400 tonnes). Although the decrease in catch and effort have greatly reduced the pressure on this sub-population, the IOTC SC considers that further reductions would be required to be certain that rebuilding was initiated.

#### 4.3.6 Pelagic sharks

Qualitatively, at least 15 species of sharks are caught in open ocean fisheries in the Indian Ocean, with blue (*Prionace glauca*) and silky (*Carcharhinus falciformis*) sharks probably the most prevalent species, but other species, specifically shortfin mako (*Isurus oxyrinchus*) are also taken in significant number. The Indian Ocean borders on the top two shark-fishing nations in the world, Indonesia and India, which together have accounted for 22% of the total FAO-reported *chondrichthyan* global landings since 2000. Landings of these species have been steadily rising in both the Eastern and Western Indian Ocean since the 1950s, although there has been a slight decline since 2004.

The blue shark (*Prionace glauca*) is common in pelagic oceanic waters throughout the tropical and temperate oceans worldwide. It is often found in large single sex schools containing individuals of similar size. Adult blue sharks have no known predators; however, sub-adults and juveniles are eaten by both shortfin makos and white sharks as well as by sea lions. Fishing is likely to be a major contributor to adult mortality. Preliminary data for Indian Ocean shows that male may reach 25 and females 21 years old.

The shortfin mako shark (*Isurus oxyrinchus*) is widely distributed in tropical and temperate waters warmer than 16°C. Makos prefer epipelagic and littoral waters from the surface down to depths of 500 meters. Shortfin mako is not known to school. It has a tendency to follow warm water masses polewards in the summer. The shortfin mako shark is a large and active shark and one of the fastest swimming shark species. It is known to leap out of the water when hooked and is often found in the same waters as swordfish. This species is at the top of the food chain, feeding on other sharks and fast-moving fishes such as swordfish and tunas. The maximum age of shortfin makos in Northwest Atlantic Ocean is estimated to be over 24 years with the largest individuals reaching 4 m and 570 kg. These sharks are often targeted by some semi-industrial, artisanal and recreational fisheries and are a secondary target in the pelagic longline tuna and swordfish fishery.

Overall, the SC IOTC considers that there is a paucity of information available on sharks and this situation is not expected to improve in the short to medium term. There is no quantitative stock assessment or basic fishery indicators currently available for any of the sharks in the Indian Ocean therefore the stock status for all species is highly uncertain and even basic catch data is poor and unreliable for the Indian Ocean. In general, the life history characteristics of sharks (i.e. long-lived, late maturity, few offspring) means that they are vulnerable to overfishing. This is also the case for blue shark and shortfin mako which are common by-catch in the surface longline fishery. These two species may be considered as secondary target species and not bycatch, depending on perspective. The SC (IOTC) advice is that the Commission should pursue better mechanisms for contracting parties to comply with reporting requirements on sharks, as stipulated in IOTC resolutions, including possible amendments to resolutions in force.

#### 4.3.7 Overview of stock status and management measures

An overview of stock status and management advice on the main stocks targeted under the EU-Mozambique FPA is provided in Table 25.

**Table 25: State of stocks relevant to the EU-Mozambique FPA. Modified from the Report of the 13th Session of the IOTC Scientific Committee (SC) (Dec. 2010).**

Stock	Indicators		Stock state	Stock status comments	Management Advice
Bigeye	Avg catch 2005-2009:	114,600 tonnes	Healthy stock; probably not overfished	The stock is probably not overfished, and overfishing is probably not occurring. However, the stock is probably near full utilization, and the possibility of overfishing cannot be ruled out given the existing uncertainty, and the continuing observed decline in catch rates.	Bigeye catches in the Indian Ocean should be kept at or lower than the 2009 level of 102,000 t.
	Catch 2009:	102,200 tonnes			
	MSY:	114,000 tonnes (95,000-183,000 tonnes)			
Skipjack	Avg catch 2005-2009:	502,200 tonnes	Healthy stock probably not overfished	Skipjack is a highly productive species and robust to overfishing. However, this does not exclude completely the possibility for skipjack to become overfished. Recent trends in certain fisheries suggest that the situation of the stock should be closely monitored.	Stock status is uncertain and should be closely monitored.
	Catch 2009:	440,600 tonnes			
	MSY:	-----			
Yellowfin	Avg catch 2005-2009:	371,200 tonnes	Previously overfished; recovering	Stock is likely to be currently in, or approaching, an overfished state and overfishing has probably been occurring in recent years. If fishing effort displaced because of the piracy problem returns to traditional fishing areas an increase in catches could be expected.	Yellowfin catches in the Indian Ocean should not increase beyond 300,000 tonnes in order to bring the stock to biomass levels that could sustain catches at the MSY level in the long term. If recruitment continues to be lower than average, catches below 300,000 tonnes would be needed to maintain stock levels.
	Catch 2009:	288,100 tonnes			
	MSY:	320,000 tonnes (258,000-347,000 tonnes)			

Stock	Indicators		Stock state	Stock status comments	Management Advice
Swordfish	Avg catch 2005-2009:	27,100 tonnes	Healthy stock; probably not overfished	The overall stock size and fishing pressure are estimated to be within acceptable limits and the overall level of reduction in stock size probably does not represent a conservation risk. If the southwestern region is analysed as containing a separate stock, results indicate that a substantive decline took place in that area. There is a risk that fishing pressure in the southwestern region may be above sustainable levels.	If the recent declines in effort continue, and catch remains below MSY, then there is no need to introduce restrictive management actions in the Indian Ocean as a whole. Catches in the southwest region should not exceed 2008 levels of 6,400t
	Catch 2009:	22,100 tonnes			
	MSY:	29,000 tonnes (19,000-46,000 tonnes)			
Blue shark	Avg catch 2005-2009: Catch 2009:	Uncertain Uncertain	Uncertain	No quantitative assessment is available. No reliable indicators	Stock status is uncertain
Shortfin mako	Avg catch 2005-2009: Catch 2009:	Uncertain Uncertain	Uncertain	No quantitative assessment is available. No reliable indicators	Stock status is uncertain

#### 4.3.8 Regional management measures for highly migratory species

Based on the findings of the IOTC Scientific Committee, there are some concerns in relation to major stocks of large pelagic fishes; a) yellowfin is recovering from overfishing and recruitment is currently at a low level, making stock recovery more difficult, b) there is concern for the number of juvenile bigeye being caught by purse seiners fishing on FADs, c) the continued increase in skipjack catches, despite its resilience to overfishing, cannot be expected to continue indefinitely, d) there may be a sub-population of swordfish in the southwest which has been subject to over-exploitation, and may still be so e) there is insufficient data on catch levels and stock condition of several species of sharks which are known to be sensitive to excessive levels of exploitation.

##### *Data reporting requirements*

The improvement of available data is one of the important issues considered by the IOTC., Some measures of particular importance in this respect are:

Res. 10/02 Mandatory statistical requirements for IOTC Members and Cooperating non-Contracting Parties (CPCs) which is applicable to tuna and tuna-like species, as well as the most commonly caught shark species and, where possible, to the less common shark species. CPCs are also encouraged to record and provide data on species other than sharks and tunas taken as bycatch

Res. 10/03 Concerning the recording of catch by fishing vessels in the IOTC area. This concerns a new logbook reporting format to be implemented by purse seiners primarily, including more specific reporting fields for effort data, fishing method, by-catch, etc. A model is included in Annex 5.

Res. 10/04 on a Regional observer scheme, requiring that at least 5 % of the number of operations/sets for each gear type by the fleet of each CPC while fishing in the IOTC Area shall be covered by an observer scheme. For vessels under 24 meters, if they fish outside their EEZ, the above mentioned coverage should be achieved progressively by January 2013. Artisanal fisheries are also to be covered by land-based sampling with a coverage progressively increasing towards 5% of the total levels of vessel activity (i.e. total number of vessel trips or total number of vessels active).

##### *Conservation measures*

The IOTC seeks to adopt conservation measures in order to maintain fishing for highly migratory stocks within sustainable limits. The main problem is that these species are caught by a variety of fleets, including numerous artisanal fleets, making it difficult to design measures that can be applied to all. The main options being considered are a freeze on fishing capacity and the elimination of IUU vessels, before the implementation of measures on fishing quotas. The issue of implementing quotas are challenged by the artisanal fishing countries and there is still a major hurdle of reliable catch statistics in order to being able to implement a quota system.

The main measures in place taking the first steps towards the management of fishing capacity and conservation of stocks include the following:

- Res.03/01 on the limitation of fishing capacity. CPCs (IOTC Members and Cooperating non-Contracting Parties) that have more than 50 vessels on the 2003 IOTC Record of Vessels, shall limit in 2004 and the following years, the number of their fishing vessels larger than 24m LOA to the number registered in 2003. Other CPCs which have the objective of developing their fleets are to draw up a fleet development plan to submit to the Commission.
- Res. 05/01 on conservation and management measures for bigeye tuna. CPCs shall limit their catch of bigeye tuna to their recent levels of catch. Taiwan Province of China shall be requested to limit their annual bigeye catch in the IOTC area to 35,000 tonnes. CPCs with catches under 1000t, who intend to substantially increase their catches of bigeye will be allowed to submit fleet development plans during a 3-year interim period (2006-2008)

- Res. 09/02 on the implementation of a limitation of fishing capacity (applicable in 2010 and 2011). The IOTC shall be notified by 31 Dec 2009 the list of vessels actively fishing for tropical tunas during 2006 and for swordfish and albacore during 2007 (vessels larger than 24m or less than 24m if fishing outside national EEZ). Changes in the number of vessels should not lead to an increase of fishing effort on the fish stocks involved (or to higher individual transferable quotas allocated by national administrations). CPCs which have submitted fleet development plans shall confirm, by 31 December 2009, inter alia, the type, size, gear and origin of the vessels included in the Fleet Development Plans and the programming (precise calendar for the forthcoming 10 years) of their introduction into the fisheries). All future fishing efforts shall be in accordance with such development Plans of the concerned CPCs.

As stated in EU Council Regulation No 57/2011, the limits on EU fishing capacity are set to 49 vessels (96 595 GT) authorised to fish for tropical tunas in the IOTC area and 72 vessels (21 922 GT) authorised to fish for swordfish and albacore. This corresponds to the purse seine and longlines fleets, respectively. In addition, France can authorise 15 additional vessels registered in La Réunion until end 2011 providing additional capacity remains below 3,375 GT.

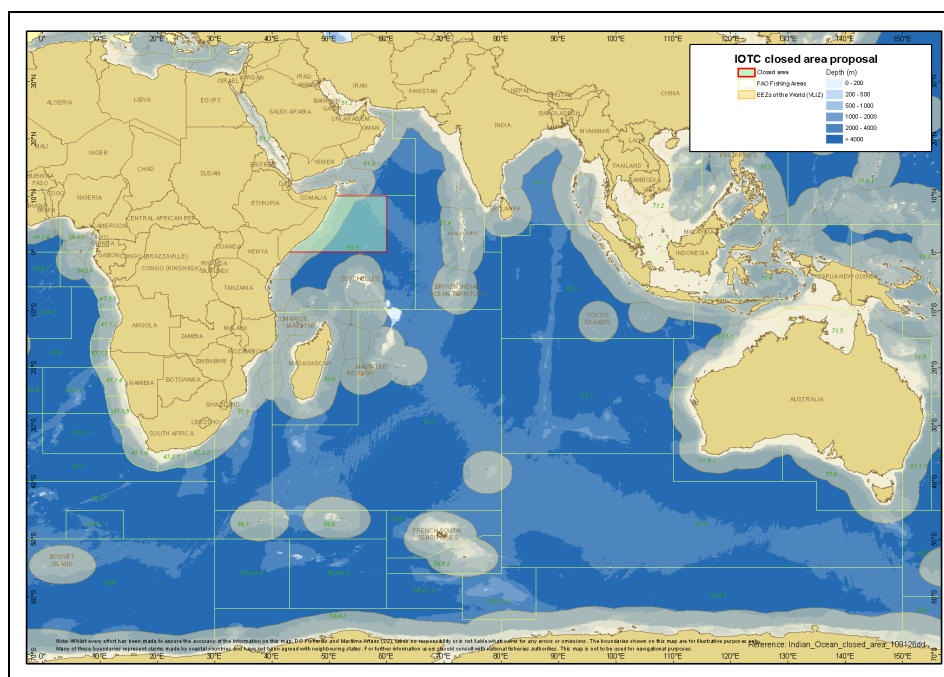
Also, the IOTC has agreed that for the years 2011 and 2012, a time area closure shall apply to all vessels larger than 24m LOA (and less than 24m LOA if fishing outside their own EEZ) in a part of the Somali Basin (0 ° - 10° N / 40° -60 ° E; see Figure 8), concerning longliners from 1st February to 1st March and purse seiners from 1st November to 1st December (IOTC Resolution 10/01). Although the resolution states a “view” to decreasing the pressure on the main targeted stocks and in particular on the yellowfin tuna and bigeye tuna, the Scientific Committee of the IOTC (2010) has highlighted the fact that the management objectives of this closure are not clear enough and preliminary results<sup>42</sup> indicate that alternative spatial and/or temporal strata would need to be added for the reduction of catches to be of a significant level<sup>43</sup>.

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<sup>42</sup> Preliminary findings of the SC indicate that the mean annual catch reduction estimated to have occurred, relative to the catch from the whole Indian Ocean fishery in the period 1990-2009, was estimated to have been less than 2% for each of yellowfin, skipjack and bigeye, with the maximum annual reduction across all years and species less than 4%.

<sup>43</sup> The area was practically off limits anyway as a result of piracy attacks. Furthermore, measuring the effects of this time area closure is confounded with the effect of the recently declared MPA englobing the Chagos Archipelago.





(Source: IOTC)

**Figure 8: Zone of the time area closure implemented for in 2011 and 2012 for all vessels fishing tuna and associated species.**

Fishing using large-scale driftnets has recently been banned on the high seas of the IOTC (Res. 09/05), defined as gillnets of more than 2.5 km in length.

One of the negative effects of industrial purse seining, also highlighted by the STECF, is the catch of juveniles in the fisheries on FADs (retention of bigeye and yellowfin juveniles). EU, Seychelles and Iranian purse seine vessels retain rather small volumes of bigeye and yellowfin tuna compared to longliners, but these constitute large numbers of (small) individuals. This has the effect of increasing mortality on the younger classes and reduces the number of individuals who will reach maturity. This is due primarily to purse seining on FADs, which is an indispensable strategy for targeting skipjack and without which the commercial viability of industrial purse seine fleets would be compromised. Limited progress has been made in this context, considering the problem of designing effective measures that do not have undesired side-effects.

### **Controls on IUU fishing**

In relation to IUU fishing, important progress has been made with the adoption of Res. 10/11 on port state measures to prevent IUU fishing (e.g. inspections of at least 5% of landings or transshipments in ports). This complements other measures against IUU fishing such as Res. 06/03 on the establishment of satellite-based vessel monitoring systems (for vessels larger than 15m) and Res.09/03 on the establishment of an IUU vessel list and Res. 08/02 on establishing a programme for transshipment by large-scale fishing vessels, which specifies that all transshipment operations of tuna and tuna-like species in the IOTC area must take place in port (except for larger longlines which have to establish a monitoring programme for transshipment at sea to authorised carrier vessels).

### *Shark protection measures*

Council Regulation (EC) No 1185/2003 on the removal of fins of sharks on board vessels states that, "...the removal of shark fins on boards vessels should therefore be prohibited...this prohibition should apply to all Elasmobranchii, except for the removal of ray wings" (§6). However this regulation further states the fishing masters with a valid fishing permit are allowed to remove fins, provided that the remaining parts of sharks are kept on board, in order to facilitate processing (§7 and §8). In no case shall the theoretical weight of the fins exceed 5% of the live weight of the shark catch (theoretical conversion rates to be established by MS). Thus, derogation can be requested provided certain conditions are met (processing purposes, need to separate, capacity to use all shark catch except for minor discards – beheading, gutting and skinning). This regulation is considered by some NGOs to be deeply flawed<sup>44</sup> and the European Commission has recognised that this regulation is difficult to control and enforce. Some examples of the difficulties are:

- Conversion ratios may be too high in some cases and can be uncertain (also different conversion rates used by different fleets)
- As some discarding is allowed (head, guts, skin), it is difficult to know what effect this has on conversion
- As landing of carcasses and fins can be separated, but in bulk (not taking into account species for example), conversion has to be in bulk and thus highly uncertain

During the IOTC latest session (March 2011), the EU proposal of prohibiting the retention onboard of endangered species of hammerhead and oceanic white tip sharks was rejected. Another issue concerns shark-finning, where IOTC Res. 05/05 allows for the retention of fins up to a total of 5% of the weight of sharks onboard. The European Commission has stated its intention to eradicate the practice of shark finning when concerning EU vessels, as the current system (EC No. 1185/2003) makes control difficult and compliance hard to ensure<sup>45</sup>. In fact, the UK has already made a policy decision to cease issuing derogations to allow shark finning at sea as from January 2009 (i.e. derogations allowed in the EC regulation) and has effectively banned shark-finning in UK vessels, pending the introduction of a new, more effective EU regulation to stop the practice of shark-finning (expected in the first half of 2011)<sup>46</sup>.

Res. 10/12 on the conservation of thresher sharks. IOTC Member and Cooperating Parties (CPCs) are prohibited from retaining on board, transshipping, landing, storing, selling, etc. all species of the family Alopiidae

Limited progress was achieved on other issues in the last IOTC Session, considering issues such as the adoption of conservation measures (allocation of quotas, management of fishing capacity), effective monitoring of artisanal fleets, improving data to be provided on shark fisheries and by-catch, and to strengthen the fight against IUU fishing (the inclusion of more vessels in the IUU lists were rejected) will need to be addressed in the near future.

### *Compliance with IOTC adopted measures*

IOTC has adopted numerous management measures in the form of resolutions and recommendations, since it became operational in 1997. The degree of implementation of these resolutions and recommendations by the different Contracting Parties is a constantly

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<sup>44</sup> OCEANA. Shark finning and the EU.

[http://eu.oceana.org/sites/default/files/euo/OCEANA\\_Finining\\_Feb\\_2011.pdf](http://eu.oceana.org/sites/default/files/euo/OCEANA_Finining_Feb_2011.pdf)

<sup>45</sup> Press release of DG MARE 15/11/2010

<sup>46</sup> DEFRA Annual Report on the implementation of Council Regulation (EC) No 1185/2003. July 2010

recurring issue for the conservation of Indian Ocean tunas and species under the IOTC mandate.

IOTC established a compliance committee in 2002 (Res. 02/03) responsible for monitoring compliance by Contracting Parties of the decisions of the commission, but it was only in 2010 that the functions were specified (Res. 10/09). The latest Session of the IOTC (18-22 March 2011) was preceded by a meeting of the Compliance Committee. This was the first country-based compliance exercise, which scrutinised each and every IOTC member and Cooperating Party. The results confirm that lack of full compliance is a major problem, including with regard to provisions concerning reporting on catch and fishing activity (including pelagic shark species) which are essential for reliable assessments for management purposes<sup>47</sup>.

It is important to point out that the EU level of compliance with IOTC measures, including the provision of detailed data on for example bycatches and discards, is generally considered to be good. Concerning recent measures adopted by the IOTC in 2010, the EU is currently working on a new Council Regulation which will transpose measures adopted by Tuna RFMOs into Community Law. In relation to the IOTC, this will include the spatio-temporal closure (Res. 10/01, statistical requirements (10/02), catch recording (PS logbook, 10/03), fund for developing CPCs (10/05), reducing bycatch of seabirds (10/06), record of vessels (10/07 and 10/08), functions of the Compliance Committee (10/09) and market related measures (10/10).

This new EU Council Regulation under preparation will also transpose into EU law the measures adopted by the IOTC in previous sessions such as: control and surveillance, marine turtles, seabirds, transshipments and actions against IUU activities.

The requirement to establish an observer scheme (10/04) is already incorporated into EU legislation (as well as other IOTC resolutions on vessel recording, port inspection, IUU fisheries, driftnets, transshipments, VMS, etc.). The EU is also in the final phase of approving the FAO Port State Agreement, which globally transposes the IOTC Resolution on Port State Measures (10/11).<sup>48</sup>

## 4.4 Non-target impacts of large pelagic fisheries

### 4.4.1 Discards and Bycatches

#### *Purse seiners*

A recent study refers to observations made on Spanish and French purse seine fleets since 2003<sup>49</sup>. Over the period 2003-2007, bycatches and discards were estimated at 9,585 tonnes, corresponding to 35.5 tonnes / 1,000 tonnes of tuna landed. Discards are higher when fishing on FADs compared to fishing free schools. Discards of tuna represented 5,177 tonnes annually, or 19.2 tonnes / 1,000 tonnes. The predominant species discarded were skipjack, little tuna and kingfish. The major tuna (bigeye, yellowfin and skipjack tunas) are also rejected when their length is less than 45 cm or less than a weight of 1.5 kg.

Incidental catches of billfish represented 1.5% of discards and bycatches by purse seiners. Billfish, except sailfin, are more vulnerable when fishing on FADs than on free school. Sharks (except whale shark) represented 10.1% of discards and bycatches. The silky shark (*Carcharhinus falciformis*) and oceanic whitetip (*Carcharhinus longimanus*) represent the bulk of sharks caught. Rays accounted for only 0.7% of total discards and bycatch. Other

<sup>47</sup> Press release of DG MARE 23/03/2011: Results of the Indian Ocean Tuna Commission meeting.

<sup>48</sup> EU Report of Implementation 2011. IOTC-2011-S15-CoC49(E)

<sup>49</sup> Amande, Ariz, Chassot, Chavance, Delgado, Gaertner, Murua, Pianet et Ruiz. By-catch and discards of the European purse seine tuna fishery in the Indian Ocean. Estimation and characteristics for the 2003-2007 period. IOTC-2008-WPEB-12

fish represented 33.7% of discards and bycatches, consisting of triggerfish, dolphin fish, barracuda, wahoo, etc., mostly on FADs.

### **Long liners**

A recent study provides an overview of the bycatch levels by species landed by the Spanish surface longline fleet targeting swordfish (*Xiphias gladius*) in the Indian Ocean, which is the most important EU longline fleet in the region, during the years 2007 and 2008<sup>50</sup>. The three most prevalent species in the catch were swordfish, blue shark (*Prionace glauca*) and shortfin mako (*Isurus oxyrinchus*), which represented 84.3% and 88.5% of the total Indian Ocean landings from Spanish longliners in weight during the last two years, respectively. Swordfish, the primary target, constituted 44% of the catch, large pelagic sharks comprised an average of 78.0% of the total bycatch in weight, tunas accounted for 12.3%, billfish, 3.1% and other species, 6.6%.

It is important to note that there are concerns about fishing pressure on shark species, considering their biological characteristics (low fecundity, slow growth and long life) which are linked to low resilience to fishing effort and high risk of recruitment overfishing. The conservation status<sup>51</sup> of relevant shark species is shown in the following Table 26.

Blue shark and short-fin makos, secondary targets of EU longline fleets, are relatively more resilient to fishing pressure, but there are concerns due to lack of reliable data on the status of shark stocks in the Indian Ocean. The general paucity of data on shark fisheries in the Indian Ocean makes it difficult to achieve progress (i.e. poor compliance by CPCs) and it may be necessary to adopt precautionary measures such as in the case of thresher sharks (IOTC Res. 10/12 prohibiting the retention onboard of thresher sharks and the obligation to release alive, when possible).

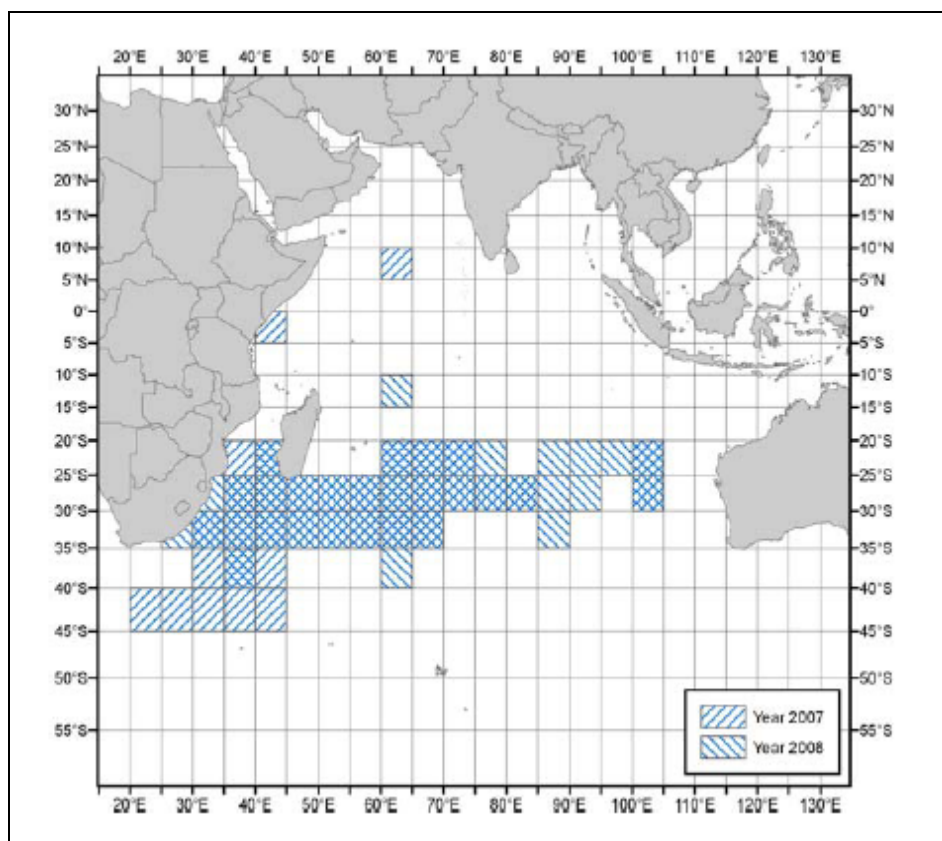
**Table 26: Conservation status of relevant shark species**

Species	Status	Catch rates by the Spanish longline fleet %
Blue shark ( <i>Prionace glauca</i> ):	Near Threatened at global level	38
Silky shark ( <i>Carcharhinus falciformis</i> ):	Near Threatened in the WIO	0.3
Oceanic white-tip shark ( <i>Carcharhinus longimanus</i> ):	Vulnerable at global level	0.3
Short-fin mako ( <i>Isurus oxyrinchus</i> ):	Vulnerable at global level	5.0
Scalloped hammerhead shark ( <i>Sphyrna lewini</i> ):	Endangered in the WIO	0.4 ( <i>Sphyrna spp.</i> )

Source: International Union for Conservation of Nature (IUCN)

<sup>50</sup> Ramos-Cortelle, A., Garcia-Cortés, B., Fernández, Mejuto, J. 2009. Scientific catch estimations of bycatch species landed by the Spanish surface longline fleet targeting swordfish (*Xiphias gladius*) in the Indian Ocean with special reference to the years 2007 and 2008. IOTC-2009-WPEB-03

<sup>51</sup> IUCN Red List: [www.iucnredlist.org](http://www.iucnredlist.org)



Source: Ramos-Cortelle et al, 2009

**Figure 9: Fishing areas of the Spanish surface longline fleet during the years 2007 and 2008, in the Indian Ocean**

#### 4.4.2 Marine turtles

Six species of marine turtles inhabit the Indian Ocean and are likely interact with the fisheries for tuna and tuna-like species: green turtle (*Chelonia mydas* - endangered), hawksbill turtle (*Eretmochelys imbricate* – critically endangered), leatherback turtle (*Dermochelys coriacea* – critically endangered), loggerhead turtle (*Caretta caretta* - endangered), olive ridley turtle (*Lepidochelys olivacea* - vulnerable), and flatback turtle (*Natator depressus* – status uncertain). Some limited data on marine turtle bycatch in IOTC longline and purse seine fisheries have been reported to the IOTC.

##### *Purse seine*

European Union observers (covering on average 5 % of the operations annually) reported 74 marine turtles were caught by French and Spanish purse seiners over the period 2003 to 2007<sup>52</sup>. The most common bycatch species reported are olive ridley, green and hawksbill turtles. Olive ridley turtle is the most impacted, primarily in the northwest Indian Ocean. The green turtle and the hawksbill turtle, which have lower catch rates, are more commonly caught in the northern Mozambique Channel. These were mostly caught on FAD sets and returned to the sea alive (although there is no systematic information on survivorship after release). Mortality levels of marine turtles due to entanglement in the drifting FADs set by the fishery are still unknown and needs to be assessed, but the EU purse-seine fleet is making progress towards the conversion to ecological FADs.

<sup>52</sup> Report of the Scientific Committee of the IOTC (13th Session, Dec. 2010)

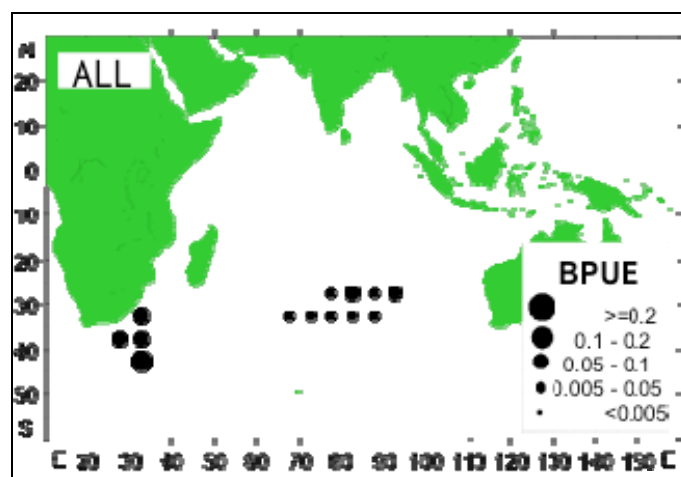
### Surface Longline

Limited information is on interactions with longline fleets. The SC IOTC<sup>53</sup> presents data from the South African longline fisheries indicates that it is mostly leatherback turtles that are caught, with lesser amounts of loggerhead, hawksbill and green turtles. Estimated average catch rates of marine turtles ranged from 0.005 to 0.3 turtles per 1,000 hooks and varied by location, season and year. This is consistent with other sources of data (Programme *Palangre Réunionnais* 1997-2000; Fishery Survey of India 2005-2009). The highest catch rate reported in one trip was 1.7 turtles per 1,000 hooks in oceanic waters. It is not known if this fishing activity represents a serious threat to marine turtles, as is the case in most other fisheries regions of the world. However, the IOTC has adopted precautionary measures (Res. 09/06) to mitigate the impact of fishing operations on sea turtles.

#### 4.4.3 Seabirds in surface longline fisheries

Eight seabird families occur within the convention area of the Indian Ocean Tuna Commission, either regularly or as breeding species. They are commonly referred to as penguins, albatrosses and petrels, tropicbirds, gannets and boobies, cormorants, frigatebirds, and skuas, gulls and terns. Of these, the *Procellariiformes* (albatrosses and petrels) are the species most susceptible to being caught as bycatch in longline fisheries, and therefore are most susceptible to direct interactions with IOTC fisheries. Worldwide, 18 of the 22 species of albatross are listed by the IUCN as globally threatened, with bycatch in fisheries identified as the key threat to the majority of these species. Impacts of longline fisheries on seabird populations have been demonstrated. In general, other IOTC gear types (including purse seine, bait boats, troll lines, and gillnets) are considered to have low incidental catch of seabirds, however data remain limited.

A recent study presented to the Scientific Committee of IOTC gives an estimate of bycatch of seabirds by Taiwanese longline fleet in the Indian Ocean between 2002 and 2006<sup>54</sup>. It appears that the rate of incidental catch of seabirds varies from 0 to 0.22 per 1,000 hooks, in 5x5 degree squares, with an average of 0.048 for 1,000 hooks. The spatial distribution is highest in the SW Indian Ocean (30 ° -45 ° S / W 25 ° -35 ° E and 25-35 ° S / 65-95 ° E) as shown on Figure 10.



Source: Huang, Chang & Tai 2008, IOTC-2009-SC-INF14

**Figure 10: Distribution of BPUE from 2002 to 2006 for the Taiwanese longline fleet**

<sup>53</sup> Report of the Scientific Committee of the IOTC (13th Session, Dec. 2010)

<sup>54</sup> Huang, Chang, Tai 2008. Preliminary estimation of seabird bycatch of Taiwanese longline fisheries in the Indian Ocean. IOTC-2008-WPEB-17

#### 4.4.4 Management measures for non-target impacts

The Working Party on Ecosystems and Bycatch (WPEB) was established in 2005 under the IOTC and had its 6th session on 27-30 October 2010. A major hurdle continues to be the lack of data collection and reporting on ecosystem and bycatch matters, despite the requirements as detailed in the IOTC Resolutions, thus preventing the WPEB from progressing on the estimation of bycatch and ecosystem effects, and therefore limiting the provision of management advice.

The approach adopted by the IOTC has been to adopt precautionary methods. Regarding turtles these include Res. 09/06 on which requires the collection of relevant information, release alive if possible, and the introduce mitigation measures (although these are not specified).

Res. 10/12 on the conservation of thresher sharks. IOTC Member and Cooperating Parties (CPCs) are prohibited from retaining on board, transshipping, landing, storing, selling, etc. all species of the family Alopiidae

IOTC has also adopted three precautionary measures since 2005 to address seabird bycatch. The current measure (Resolution 10/06) requires that all longline vessels fishing south of 25°S use at least two seabird bycatch mitigation measures selected from a table (e.g. bird-scaring or tori lines, night-setting, weighted branch lines, etc.).

It is important to note that recent establishment of the IOTC Regional Observer Scheme (ROS) started on 1st July 2010, as per Resolution 10/04, is expected to produce data on bycatch and discards as well as other data of use to determine effects on the ecosystem. The aim is to collect scientific observer data for at least 5% of the fishing operations of vessels over 24m and vessels under 24m fishing outside their EEZ. An indicative level of the coverage of artisanal fishing vessels is also given, which should progressively increase towards 5% of the total levels of vessel activity to be covered by land-based sampling schemes (i.e. total number of vessel trips or total number of vessels active).

## 5 IMPACTS OF THE FISHERIES PARTNERSHIP AGREEMENT

### 5.1 Outline of the Agreement

In December 2006, the EU and Mozambique initialled a Fisheries Partnership Agreement that abrogated and replaced the previous framework agreement of 2003 and its protocol.

The EU-Mozambique Fisheries Partnership Agreement and the First Protocol were adopted by Council Regulation (EC) No 1446/2007 of 22 November 2007 on the conclusion of the Fisheries Partnership Agreement between the European Community and the Republic of Mozambique<sup>55</sup>. This Agreement provides fishing possibilities exclusively for EU vessels in the “tuna fishing” category fishing in Mozambique waters. The demersal category included in the previous agreement and protocol was eliminated.

The Agreement provides fishing possibilities for EU vessels fishing in the waters of the Mozambique<sup>56</sup>. It includes fishing possibilities for up to 44 purse seiners and 45 surface longliners. The fishing possibilities are allocated to Member States by Council Regulation 1446/2007, as shown in Table 27.

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<sup>55</sup> Official Journal of the European Union L 331/1 of 17.12.2007

<sup>56</sup> The EEZ of Mozambique borders with 4 sovereign countries and 3 islands under French sovereignty. Agreement on the maritime boundary is only in place with Tanzania, the remaining boundaries are subject to delimitation on the principles set out in UNCLOS. Since the EEZ has not been so defined the Protocol defines the coordinates of the permitted fishing zones outside the 12nm territorial waters rather than the EEZ. See section XX.

The EU financial compensation amounts to EUR 650,000 per year, based on a reference tonnage of 10,000 tonnes of tuna valued at EUR 65 per tonne (as with all other tuna fishing agreements concluded by the EC). Each vessel drawing an annual licence pays an advance on a licence fee to the Mozambique authorities corresponding to a nominal catch of highly migratory and related species at the rate of EUR35/tonne. Validated catches by a vessel above the nominal catch are subject to an additional licence fee at the rate of EUR 35/tonne. The nominal catches and fees are set out in Table 28.

**Table 27: Allocation of fishing opportunities under the EU-Mozambique Fisheries Partnership Agreement**

Types of vessel	Member State	No. of licences
Purse seine	Spain	23
	France	10
	Italy	1
Surface longliners	Spain	23
	France	11
	Portugal	9
	United Kingdom	2

The financial compensation from the EU is supplemented by a specific amount of EUR 250,000 towards the support of a sectoral fisheries policy of Mozambique. In the Protocol the authorities of Mozambique have committed to allocate 100% of the EU's total financial contribution of EUR 900,000 to the development of the fisheries sector.

The Agreement also establishes a framework for partnership between the two parties with a view to defining a sustainable fisheries policy in Mozambique and identifying the appropriate means to implement it, according to the EU policy to move from access agreements to Partnership Agreements aiming to strengthen the conditions to achieve sustainable fisheries



**Table 28: Nominal catches and licence fees for EU vessels operating under the Agreement**

<b>Fleet segment</b>	<b>Nominal catch* (tonnes)</b>	<b>Licence fee (EUR)</b>
Tuna seiner	120	4,200
Surface longliner > 250 GT	100	3,500
Surface longliner < 250 GT	48	1,680

\*corresponding to advance payment

The Protocol to the Agreement also sets out the modalities for the implementation of the Agreement, in terms of the applications for and issue of licences, fishing zones, observers, embarkation of seamen, VMS protocols etc.

## **5.2 Implementation of the Agreement**

### **5.2.1 Preliminary activities**

Although the Protocol was not formally ratified by both parties until November 2007, the parties Agreed in an exchange of letters on 21 December 2006 to implement the Agreement from 1 January 2007. The European Commission committed to pay the first instalment of the financial contribution before 31 October 2007.

### **5.2.2 Technical meeting April 2008**

The European Commission undertook a field mission to review the implementation of the Agreement in April 2008, during which time technical meetings were held between the Parties. The meetings were used to present the Fisheries Partnership Approach and to discuss the possible areas for inclusion in a matrix of sectoral policy measures to be supported by the EU financial contribution. The parties recognised the relevance of the 5 Year Economic and Social Plan (2008 to 2013), the Fisheries Master Plan (1995-2005) and the PARPA II Action Plan for the Reduction of Absolute Poverty (2006-2009). It was foreseen that a matrix of measures would be drafted and submitted for comment by June 2008. However, much of the discussions also considered the mode of utilisation of unspent targeted action funds under the previous Fisheries Agreement. The meeting did recognise a number of problems such as weak capacity of the Fisheries Monitoring Centre, and lack of communication of the catch reports by EU vessels.

### **5.2.3 First Joint Committee Meeting**

In the event the first meeting of the Joint Committee took place in Maputo on 6 November 2008. The meeting considered the disbursement of the unspent targeted action funds under the previous Fisheries Agreement. Some activities were programmed using these funds during the first three years of the Fisheries Partnership Agreement (2007 -2009), covering satellite VMS, institutional development, strengthening of statistical system, fisheries research, quality control, fisheries infrastructure and attendance at international meetings.

This meeting also identified the priorities for the sectoral policy measures under the FPA and agreed on a matrix of measures based on 3 strategic objectives, each with a series of specific objectives and activities. However, the cost of each activity was not specified.

At the first JC meeting, the parties also considered the initial utilisation of the opportunities to be satisfactory, but recognised the low level of catches in relation to the reference tonnage. The Mozambique authorities expressed concern about apparent non-reporting of catches by EU vessels fishing in the Mozambique zone. Concerns were also expressed regarding validation of the catches. The parties noted that the published version of the Protocol did not mention the Fisheries Research Institute as a body responsible for the validation of catches declared by EU vessels, despite this point reportedly being agreed in the pre-agreement negotiations. Only EU Member State fisheries institutes are listed as being responsible for catch validation in the Protocol. The parties considered that the Fisheries Research Institute could meet with partner institutions in EU Member States on an annual basis to review the validated catch data.

#### 5.2.4 Second Joint Committee Meeting

The second meeting was held on 16/17 September 2010 in Brussels. Once again the parties considered the overall level of utilisation to be satisfactory, although they were concerned about the decline in licences drawn in 2010. The Mozambican party expressed the desire to adjust licence fees in line with national regulations, and the parties agreed to defer consideration of this matter until the negotiations regarding renewal of the Protocol. The Mozambican side also raised again concerns regarding non-declaration of catches by EU vessels, and the lack of their participation in validation of catch data. The Commission undertook to review non-compliance by EU vessels. The Mozambique party notified the Commission that the National Fisheries Monitoring Centre and satellite VMS had become fully operational and protocols for data exchange were agreed. The Mozambican party expressed concern regarding the lack of landings of other economic benefits from the Agreement.

The parties also considered progress on the implementation of the sectoral support measures, and adopted an updated matrix, which introduced a fourth objective regarding increased production of fish for food security (supporting activities in small scale aquaculture development).

The parties also discussed the integration of Mozambique within the Regional Plan for Surveillance of fishing activities in the SW Indian Ocean, the issue of experimental fishing licences to EU vessels under charter to Mozambique companies to fish outside the Agreement, and the exclusion from access to the EDF funded ACP Fish II project following information from the Commission services concerned (DG DEV and AIDCO) that ACP countries that benefit from Fisheries Partnership Agreements with the EU are not covered by this project.

At the time of writing, the Agreement is in its fifth year. Data is available to allow for the evaluation of utilisation to cover the period 2007 to 2010 inclusive.

#### 5.2.5 Utilisation of the fishing opportunities

Fishing opportunities have been utilised by EU vessels in all years of the Agreement. The uptake in licences is shown in Table 29. Overall 205 fishing licences have been drawn. Sixty eight vessels drew licences in 2007, falling steadily over the course of the Agreement to 36 vessels in 2010. Over the period 2007 to 2010 utilisation was 73% for purse seiners and 43% for surface longliners (overall 58%). In 2010 the utilisation rate fell to 50% (purse seiner) and 31% (surface long liner).

Overall France and Spain have made relatively good use of the purse seine opportunities, especially in the early years of the protocol. The UK and Italy have only made use of the opportunities occasionally. France did not use any of the long line opportunities.

The decline in uptake of licences is largely due to the transfer of EU tuna vessels to the Atlantic, in response to the piracy risk in the Indian Ocean. The transfer of interest of this segment to the Eastern Atlantic is particularly evident in the case of the Spanish and French flagged purse seine segment and Spanish surface longline segment.

**Table 29: Utilisation of fishing possibilities under the EU-Mozambique Fisheries Partnership Agreement**

Category	Fishing possibilities		2007		2008		2009		2010		Mean utilisation 2007/2010	
	Country	No. of licences available	Licences drawn	%	Licences drawn	%	Licences drawn	%	Licences drawn	%	Licences drawn	%
Tuna Seiners	ES	23	21	91	19	83	16	70	14	61	17,50	76
	FR	20	17	85	17	85	14	70	8	40	14,00	70
	IT	1	1	100	1	100	1	100	0	0	0,75	75
	<b>TOTAL</b>	<b>44</b>	<b>39</b>	<b>89</b>	<b>37</b>	<b>84</b>	<b>31</b>	<b>70</b>	<b>22</b>	<b>50</b>	<b>32,25</b>	<b>73</b>
Surface longliners	ES	23	24	104	19	83	10	43	10	43	15,75	68
	FR	11	0	0		0	0	0	0	0	0,00	0
	PORT	9	5	56	3	33	2	22	3	33	3,25	36
	UK	2	0	0	1	50	0	0	1	50	0,50	25
	<b>TOTAL</b>	<b>45</b>	<b>29</b>	<b>64</b>	<b>23</b>	<b>51</b>	<b>12</b>	<b>27</b>	<b>14</b>	<b>31</b>	<b>19,50</b>	<b>43</b>
	<b>TOTAL</b>	<b>89</b>	<b>68</b>	<b>76</b>	<b>60</b>	<b>67</b>	<b>43</b>	<b>48</b>	<b>36</b>	<b>40</b>	<b>51,75</b>	<b>58</b>

## 5.2.6 Compliance with the terms of the protocol

### *Catch declarations*

With the operationalisation of the satellite VMS system, the Ministry of Fisheries has developed the capacity to generate evidence of non-compliances, resulting in the launch of several legal infraction procedures (see below).

During the course of the Protocol a number of infractions were detected by the Mozambique authorities in respect of EU vessels operating under the Agreement. In fact, all relate to non-reporting or mis-reporting of catches. These are summarised in Table 30.

**Table 30: Infractions of fisheries regulations by EU vessels operating under the EU-Mozambique FPA**

Process No.	Name of vessel	Segment	Flag	Infraction	Fine (EUR)
[DELETED]	[DELETED]	SLL	Spain	Non-submission of catch reports	558
[DELETED]	[DELETED]	SLL	Spain	Non-submission of catch reports	558
[DELETED]	[DELETED]	N/A	N/A	N/A	N/A
[DELETED]	[DELETED]	SLL	Spain	Non-submission of catch reports	558
[DELETED]	[DELETED]	SLL	Spain	Non-submission of catch reports	558

Source: ADNAP, Ministry of Fisheries, Mozambique

All concern Spanish flagged surface longliners which had drawn licences to fish in the Mozambique zone. They did not submit catch reports to the Mozambique authorities in accordance with the terms of their licence. It is not known whether the offences were detected through satellite VMS evidence or due to cross checking with catch reports submitted by the vessels to their Member State (which after validation are communicated to Mozambique via the Commission). The fines levied were the maximum under the Fisheries Law and all are reported to have been paid. Both parties at the Joint Committees expressed the view that these infringements were not acceptable.

The Mozambique party has indicated that there has been a lack of direct reporting by EU vessels, in terms of entry and exit declarations, and submission of catch reports but other than the above cases has not submitted evidence of non-compliance. The lack of specified written procedures, on both sides makes the follow up of claims of non-compliances difficult. There is no evidence that EU vessels fishing under the Agreement fail to report catches to their Member State authorities. It is possible that lack of clarity in the definition of the zones in which EU vessels are permitted to fish has been factor in some of the cases of alleged reporting infractions.

In the Joint Committee of September 2010, the Commission offered “*with a view to assist the Mozambican authorities, to carry out a fact finding mission of EU inspectors in order to identify possible non-compliant fishing vessels*” However the Commission did not receive any request from the Mozambique Fishing Monitoring Centre to host such EU inspection mission.

Now that VMS functionality is established, there is increased potential to identify non-compliances. Until now the fines were modest, but the maximum available under the current law. Since the legal action there has been a reported improvement in submission of the required catch and entry/exit reports. The introduction of the new Fisheries Law will result in more realistic penalties, and compliance is therefore expected to improve further.

**Validation of catches**

According to the current Protocol, *“the final statement of the fees due for year  $n + 1$  at the latest, on the basis of the catch declarations made by each shipowner and confirmed by the scientific institutes responsible for verifying catch data in the Member States, such as the Institut de Recherche pour le Développement (IRD), the Instituto Español de Oceanografía (IEO) and the Instituto de Investigação das Pescas e do Mar (IPIMAR) via the European Commission Delegation”* (Annex; Chapter I section II).

In fact during the negotiations the parties agreed that the IIP of Mozambique should also be involved in this process, and the Commission has made it clear in the Joint Committee meetings that such participation is strongly encouraged. Mozambique wishes to participate in the process of validation of catches in its EEZ in accordance with the Portuguese version of the minutes of the Protocol negotiations, but it appears not to have initiated contact with the EU institutions concerned. Since the validation impacts on the financial revenues (in the calculation of excess catch fees) participation and transparency is considered necessary in an equitable agreement between the parties. The consultants investigated the feasibility of such participation.

This catch verification process involves the use of logbook and VMS data, together by the Member State (MS) Fisheries Administrations to the relevant above-referred institutes<sup>57</sup>. The verification consists of cross-checking logbook positions with VMS data to determine if the catches declared in the logbook are consistent with VMS positions. In the case of inconsistencies, there is a process of verification together with the Producer Organisations to resolve this, and it may thus result in adjustments of total catches taken inside or outside the EEZ of a particular third country.

It is important to distinguish this process of catch verification from routine data collection/sampling that takes place. Since 2001, the EU in support to its Common Fishery Policy established a mandatory sampling programme for the collection of data in the fisheries sector (PNDB) under the EU Data Collection Regulations (EC) No 1543/2000, 1639/2001 and 1581/2004 (recently upgraded by EC 199/2008). One of the objectives of the sampling programs set up in this framework is to estimate the discards by catch species in EU fisheries including distant-water fisheries. In particular, observer programs are promoted to estimate fisheries by-catch and discards. France and Spain, the major European acting countries in the tropical tuna purse seine fishery in the Atlantic and Indian Oceans, coordinate their scientific and technical effort in this respect. IEO and AZTI for Spain and IRD for France have developed a common framework for collecting, monitoring, analysing tuna fishery by-catch and discards, with an objective of 10% effort coverage in each ocean as recommended by ICCAT and IOTC. The methodology used by the 3 research institutes relies on 5 data collection modules; 1) environmental data, 2) fishing operations, 3) tuna size composition including discarded individuals, 4) biological data on bycatch species, and 5) fishing method including observations on FAD associated catches and bycatches.

The cooperation between MS institutes referred above does not presently include EU longline fisheries such as Spanish, Portuguese and UK vessels (but includes the French longliners based in Reunion). The monitoring of these fleets is carried out independently using various approaches (scientific observers, interviews on landings per trip, interviews with skippers at the ports, information filled out voluntarily by the fleet, etc.). Coverage levels appear to be much lower than for purse seiners in this. In the case of Portuguese longliners, an observer program is expected to start in 2011 for a coverage of about 5% (in line with requirements by IOTC).

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<sup>57</sup> Note however that IPIMAR does not appear to receive VMS data from the Portuguese Fisheries Administration, so catch verification involves an assessment of logbook data together with other scientific data sources. Thus, it does not currently take into account detailed spatial analysis (i.e. EEZs boundaries).

Monitoring activities introduced above, distinguishing from the catch verification process referred in the protocol, result in adjustments of catch totals and in adjustments to species composition (one of major objectives of sampling purse seine catches).

Considering the above, it appears that the Mozambican authorities wish to participate in the catch verification process (as per protocol) since it has direct implications on the amount of fees to be charged to EU vessels. Until now this has not taken place. Since the parties have not set out the mechanisms to be followed. The Commission has stated that it considers “*that the parties should not come to that level of detail and the relevant scientific bodies have to take the initiatives*” whilst the EU and Member States will facilitate as much as possible the Mozambique’s catch validation process.

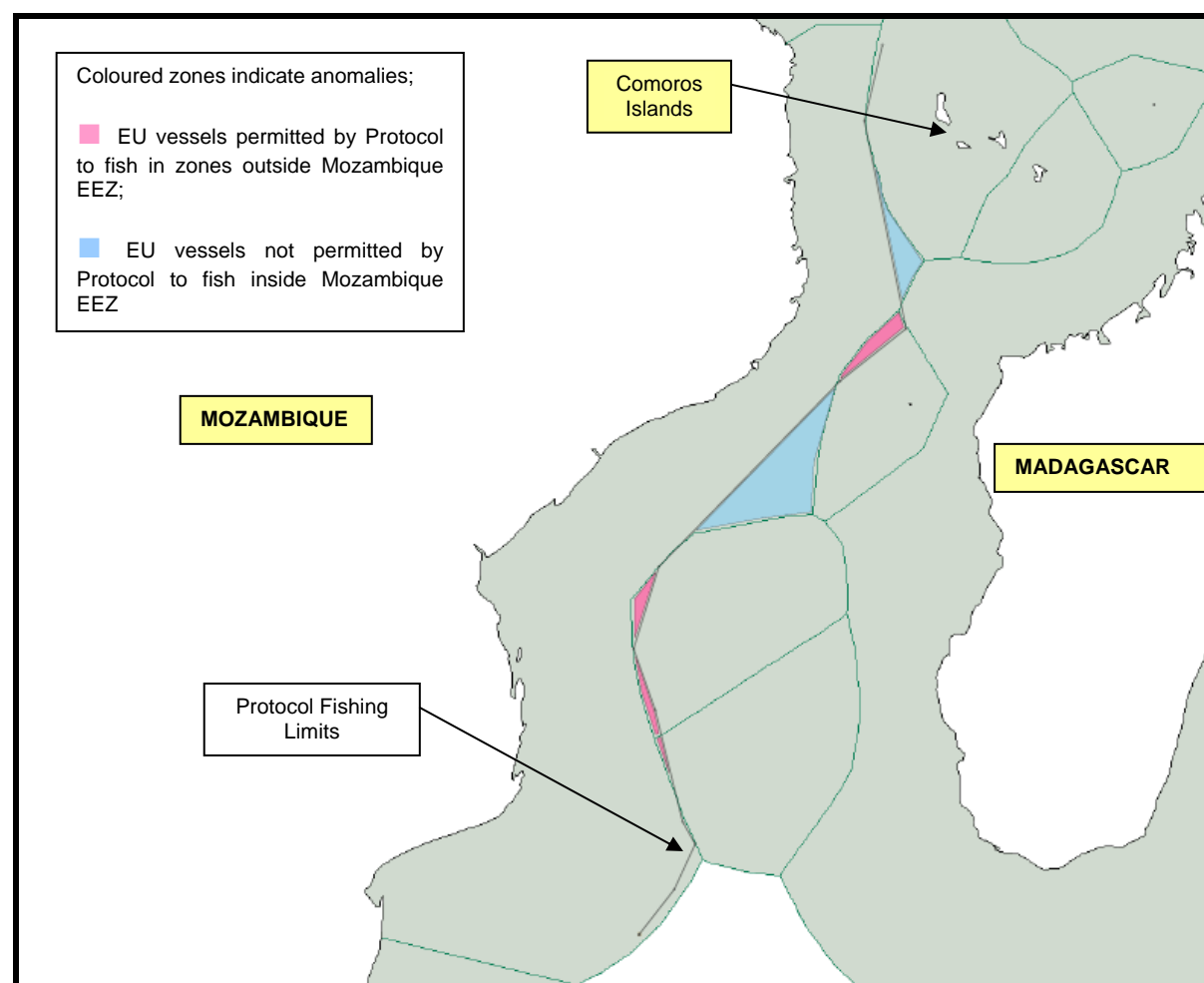
The Mozambican IIP is therefore recommended to request the Member States’ institutions to set out their catch validation procedures in writing, and to provide the IIP with an opportunity to comment on the assumptions and extrapolations made. The IIP may wish to subsequently consider inviting Member State institutions to a meeting to consider in more detail the modalities for an increased participation in the process.

### 5.2.7 Fishing zones

The designated fishing areas set out in the Protocol to the Agreement do not correspond precisely to the claimed EEZ of Mozambique. Figure 11 shows some of the key gaps and areas of overlap.

Some of area in which fishing is permitted under the Protocol fall outside the claimed EEZ (ie. where Mozambique can have no jurisdiction, shown in pink in Figure 11 and which may fall within the zones of Bassas da India and Juan de Nova, which have the status of French overseas territories). Fishing under the Agreement is not permitted in some areas which are claimed by Mozambique (shown in blue). It is not known to which zone catches made in these areas are attributed. Note also that the coordinates do not appear to extend to the limits of the maritime border with Tanzania (which is established).

Since the Mozambican authorities now have a VMS capacity, the anomalies between the defined fishing zones and claimed EEZ are likely to give rise to disputes. The main issues are in relation to entry and exit declarations, reporting of catches in the Mozambique zone, and validation of catches. There is some anecdotal evidence that some discrepancies in catch declarations may be due to a differential interpretation of the Mozambique zone. To avoid this issue generating misunderstandings, it is in the interests of both parties to re-define fishing zones in the Protocol in a manner which avoids ambiguities with the legal status of the Mozambique zone, for example by specifically prohibiting fishing in certain zones.



Source: Economic and Social Impacts of the Mozambique / EU Fisheries Agreements, Final Report, April 2008, Kusi Limitada – Consultores, Maputo, Commissioned by One World Action, <http://www.oneworldaction.org>. Note that EEZ data is based on Flanders Marine Institute, VLIZ Maritime Boundaries Geodatabase <http://www.vliz.be/vmdcdata/marbound/>

**Figure 11: Anomalies in the definition of fishing zones in the EU-Mozambique FPA**

### 5.2.8 Implementation of the partnership approach

The policy support measures were first considered by the Joint Committee at its first meeting in November 2008, almost 2 years into the Agreement. At the time, there was effectively no clear fisheries policy (the Fisheries Master Plan 1995 was in the course of revision, which resulted in the adoption of the 2010 Master Plan). Nevertheless the parties identified priorities for the sectoral policy measures under the FPA and agreed on a matrix of measures based on three strategic objectives, each with a series of specific objectives. Targets were established for 2009 only, pending the revision of the Fisheries Master Plan (PDP). The parties agreed to meet after the Master Plan was finalised to establish the subsequent measures and indicators.

#### **Objective 1: Promoting sustainable exploitation of resources**

- Commercial fisheries guarantee sustainable exploitation of commercial fisheries

#### **Objective 2: Contributing to the fight against IUU activities**

- Setting up a legal framework to fight against IUU activities

#### **Objective 3: Strengthening and development of institutional capacity of the sector**

- Development of electronic communication systems

- Training and technical capacitation of fisheries officers and district economic activity services

At the second Joint Committee meeting in September 2010 the parties did not review the policy support measures in the context of the finalised version of the Fisheries Master Plan, as they had previously agreed. They did however consider progress on the implementation of the sectoral support measures assuming that previously adopted objectives would be retained and adopted a fourth objective:

**Objective 4: Increased production of fish for food security**

- Support for activities in small scale aquaculture development

## 5.3 Financial impacts of the Agreement

### 5.3.1 Outputs from the Agreement

Table 31 shows the catches and estimate value of the catches during the first four years of the Protocol. On average, for each year, the Agreement generated catches of 3,380 tonnes of fish. Overall, only 34% of the reference tonnage was caught. Despite a lower number of licences taken, the highest catches were taken in 2010 (4,820 tonnes).

Catches from the purse seine segment averaged 2181 tonnes/year comprising yellowfin tuna (44%), skipjack tuna (49%) and some bigeye tuna (7%). All the catch by this segment is brine frozen onboard for subsequent canning. The catches are discharged in Seychelles, Mauritius, Madagascar and Mombasa.

Retained catches from the surface longline segment averaged some 1,200 tonnes/year comprised mainly swordfish (56%) and blue shark (18%) with balance being other species of shark and tunas. The catch is frozen onboard and landed mainly in Durban for transshipment to mainland EU markets.

### 5.3.2 Prices of target species

Table 31 shows the catch composition and prices used by the consultants in the valuation of the Agreement. The unit value of the purse seine segment varied between EUR 810 and 1,180 /tonne. This is considerably lower than the unit prices achieved for species caught by the surface long line segment ranging from EUR 2,956 to 3,514 /tonne.



**Table 31: Species composition and average unit values of catches**

Segment	Species	Catch composition %	Av price (EUR/tonne)				Price Data source
			2007	2008	2009	2010 <sup>3</sup>	
Purse seine	Yellowfin	44	1,700	1,400	1,040		Stakeholders
	Skipjack	49	1,030	1,020	680		Stakeholders
	Bigeye	7	1,570	1,570	1,570		Stakeholders
	Average		<b>1,170</b>	<b>1,180</b>	<b>813</b>	<b>1,054</b>	
Surface Longline	Swordfish	56.3	3,900	4,000	4,770		Puerto de Vigo
	Blue shark	17.6	900	700	730		Puerto de Vigo
	Others	7.1	2,330	2,240	2,700		Average SLL species
	Shortfin mako	5.6	2,200	2,020	2,600		Puerto de Vigo
	Tunas nei	12.8	2,330	2,240	2,700		Average SLL species
	Average		<b>2,956</b>	<b>2,948</b>	<b>3,514</b>	<b>3,139</b>	

Sources of catch composition data:

1. Purse seine: IOTC PS catch data 2007-2009
2. Surface longline: ES SLL catch data 2009
3. 2010 prices = average 2007/2009

### 5.3.3 Financial impact on the EU fleet

Table 32 shows the estimated revenues generated for the EU fleet operators by the Agreement. On average, for each of the first 4 years, based on the unit prices calculated in Table 32. The agreement generated revenues valued at EUR 6.1 million/year (at an average price EUR 1,810/tonne). Approximately 37% of the value of the Agreement is attributed to the purse seine segment. Over the course of the protocol the opportunities have become progressively more valuable to the surface longline segment both in actual and relative terms, rising from EUR1.5 million in 2007 to EUR6.1 million in 2010. About 75% of the value of catches was attributed to catches by Spanish vessels, 18% to France and 5% to Portugal.

**Table 32: Catches and values under the EU-Mozambique FPA**

Segment	Member State	2007			2008			2009			2010			Mean		
		Quantity	Av. price	Value (EUR)	Quantity	Av. price	Value (EUR)	Quantity	Av. price	Value (EUR)	Quantity	Av. price	Value (EUR)	Quantity	Av. price	Value (EUR)
		tonnes	EUR/tonne	EUR	tonnes	EUR/tonne	EUR	tonnes	EUR/tonne	EUR	tonnes	EUR/tonne	EUR	tonnes	EUR/tonne	EUR
Purse seine	ES	319	1,170	373,464	422	1,180	498,037	1,843	813	1,498,106	1,807	1,035	1,870,245	1,098		1,059,963
	FR	522	1,170	610,787	2,021	1,180	2,384,780	450	813	365,444	1,055	1,035	1,091,925	1,012		1,113,234
	IT	0	1,170	0	284	1,180	335,036	0	813	0	0	1,035	0	71		83,759
	Sub-total	841		984,251	2,727		3,217,853	2,292		1,863,550	2,862		2,962,170	2,181	1,035	2,256,956
Surface longline	ES	521	2,956	1,541,145	792	2,948	2,335,371	1,341	3,514	4,711,124	1,745	3,139	5,477,002	1,100		3,516,160
	FR	0	2,956	0	0	2,948	0	0	3,514	0	0	3,139	0	0		0
	PT	0	2,956	0	6	2,948	18,958	180	3,514	631,804	214	3,139	670,989	100		330,438
	UK	0	2,956	0	0	2,948	0	0	3,514	0	0	3,139	0	0		0
	Sub-total	521	2,956	1,541,145	799	2,948	2,354,328	1,521	3,514	5,342,929	1,958	3,139	6,147,992	1,200	3,206	3,846,598
Overall	Total	1,363	1,853	2,525,395	3,526	1,581	5,572,181	3,813	1,890	7,206,478	4,820		9,165,494	3,380	1,810	6,117,387
	Reference tonnage	10,000			10,000			10,000			10,000			10,000		
	% Reference Tonnage	14%			35%			38%			48%			34%		

Table 33 below shows that the total licence fee payments by EU vessels during the first 4 years of the Protocol was EUR 996,000, averaging EUR 249,000/year. Overall, the access costs to the EU fleet represented 4.3% of the value of fish generated. However, there are considerable variations in access costs from year to year and between the fleet segments. In general purse seiners pay a higher proportion of the revenues in access costs (7.2%) compared to the surface long line segment (2.5%). In 2007, a year when many purse seiners bought licences, but catch rates were low, this segment paid 17% of the revenues to the Government of Mozambique.

**Table 33: Access costs and catch values generated by the Agreement**

	2007	2008	2009	2010	Overall
<b>Purse seine</b>					
Licence fee	167,553	184,759	157,369	136,430	646,110
Catch value	984,251	3,217,853	1,863,550	2,962,170	9,027,823
Access fee %	17.0%	5.7%	8.4%	4.6%	7.2%
No. operating	15	22	18	20	75
<b>SLL</b>					
Licence fee	112,429	81,032	66,831	89,608	349,899
Catch value	1,406,245	2,149,622	4,877,612	5,814,519	14,247,998
Access fee %	8.0%	3.8%	1.4%	1.5%	2.5%
No. operating	14	10	7	11	42
<b>Overall</b>					
Licence fee	279,981	265,791	224,200	226,038	996,009
Catch value	2,390,495	5,367,475	6,741,162	8,776,689	23,275,821
Access fee %	11.7%	5.0%	3.3%	2.6%	4.3%
No. operating	29	32	25	31	117

NB Licence fees include licence fees advances plus additional charges as set out in Annex 5.

Source: European Commission

Out of 205 licences issued during the period, 119 vessels declared catches and of these 58 (28 purse seine and 30 surface longliners) declared catches in excess of the advance licence fee, and paid additional fees to the Government of Mozambique. There may be some scope for increasing the advance on licence fees to avoid the administrative burden of accounting for excess catches in future.

On the issue of licence fees, the EU surface longliners operating in the Indian Ocean do not target tuna, the species on which nominal compensation rates are calculated. Table 31 in Section 5.3.2 shows that surface longline catch is valued at some 221% to 395% that of the purse seine catches. The former comprises substantially (56%) high value swordfish; the latter comprises low value tunas (skipjack and small yellowfin) for cannery supply. The application of a single value for the computation of compensation and licence fees, tends to under-price the surface longline opportunities and overprice the purse seine opportunities (assuming acceptance of the principle that licence fees should be proportionate to sales price, rather than any other financial measure). This consideration applies across all EU bilateral fishing agreements incorporating fishing possibilities on tuna, and not only to the Mozambique agreement.

#### 5.3.4 Financial Impact on Mozambique

The Agreement has generated income for the Government of Mozambique in the form of an annual financial contribution from the European Union of EUR 900,000 comprising EUR650,000 in compensation and EUR 250,000 in support of sustainable fisheries policy. In addition Mozambique has also received income for the EU fleet operators in the form of

annual licence payments and fees in relation to catches in excess of the nominal amounts attached to each licence. The licence payments made by the EU fleet operators are summarised in Table 34. A more detailed breakdown is shown in Annex 5.

Overall, these have averaged EUR 249,000/year (about EUR 4,860/vessel) of which 78% was derived from initial licence payments and 16% from payments for additional catches. Overall the Agreement has delivered an average of EUR 1,149,000 per year (and since all of the contribution is allocated by the government of Mozambique to the fishery sector) this sum has been available to the budget of the Ministry of Fisheries. The impact of the Protocol on the general state budget and fisheries budgets is shown in Table 34. Overall the FPA has contributed between 3.6% and 6.0% of the fisheries budget (average 4.5%) and 0.05% of the overall state budget.

**Table 34: Financial impact of the FPA and associated income on Mozambique**

<i>Budget/ contribution</i>	<i>Annual amounts in EUR</i>				
	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>Average 2007/2010</i>
Total fisheries budget	19,579,494	27,930,394	30,950,611	24,087,877	25,637,094
Total state budget	2,013,007,373	2,513,134,080	2,579,716,494	2,633,542,689	2,434,850,159
FPA EU Contribution	900,000	900,000	900,000	900,000	900,000
FPA licence income	279,981	265,791	224,200	226,038	249,002
TOTAL FPA income	1,179,981	1,165,791	1,124,200	1,126,038	1,149,002
% of fisheries budget from FPA	6.0%	4.2%	3.6%	4.7%	4.5%
% of state budget from FPA	0.06%	0.05%	0.04%	0.04%	0.05%

The Mozambican authorities have expressed the opinion (both in the Joint Committee and to the consultants) that the access fees set by the Agreement and shown above are too low, and they seek to increase the rate of compensation/licences in the any future Protocol. Current licence fees for private operators were set out in Table 8. A foreign purse seiner landing outside Mozambique would pay EUR 26,316/year, and a surface longliner EUR 24,060/year. These licences carry no catch limits, nor additional fees for catches above a certain level. A further 10% discount is available for vessels which carry at least 3 Mozambican crew.

Under the Agreement the licence fees and compensation provide revenue to the Government of Mozambique of EUR 100/tonne<sup>58</sup> of nominal catch, up to an annual limit per vessel of 120 tonnes for seiners and 100 tonnes for surface longliners (over 250 GT capacity). The standard minimum annual fees are therefore EUR 12,000 (purse seine) and EUR 10,000 (longliners). A lower rate is provided for small longliners under the agreement. Comparing these rates with the published rates for foreign vessels landing outside Mozambique suggests that the licence rates from the FPA are some 46% and 42% of the income that would be generated were the same vessels to obtain private licences. However, EU vessels have purchased licences for additional catches in excess of the nominal catch (averaging about EUR740/year for each vessel licensed). This raises the Agreement access costs to approximately 50% of the published licence fees for foreign vessels taking private licences. This calculation does not take into account the additional benefits of the sectoral support of EUR250,000/year granted by the EU to Mozambique, which have added on average a further EUR4,800/licence drawn, raising the overall benefits of the EU fishing revenues to about 70% of what could have been derived from private access arrangements.

Mozambique informed the Commission in 2010 that it has licensed some 10 Japanese longliners (Japan Tuna Federation), 11 Seychellois purse seiners and 3 local long liners. The consultants were informed but were not able to confirm that a small number of other SE Asian

<sup>58</sup> Shared 65/35 between the EU and fleet operators

vessels had been licensed<sup>59</sup>. The estimated income from non-EU foreign licensed vessels is in the region of EUR 626,000 in 2010. The EU compensation plus licence fees is in the region of EUR 899,000 (compensation of EUR 650,000, annual licence fees of c.EUR 195,000 and excess catch fees of EUR 54,000). Mozambique therefore depends on the FPA for approximately 60% of income of about EUR 1.5 million annually is derived from the tuna fishery. If the current fee structures are retained in a new protocol, Mozambique may have an incentive to preferentially issue licences to non-EU vessels. However, since there are no quotas or specific effort limits associated with the large pelagic fisheries in the Mozambique zone, this is not likely to impact in the short term on the availability opportunities supplied under the FPA.

### 5.3.5 Financial Impact on the European Union

The annual cost of the Agreement to the EU budget is EUR650,000 in compensation and EUR250,000 in support of sustainable fisheries policy. The contribution of the EU accounts for 0,5% of the EUR170 million annually budgeted by the European Commission for the financing of the fisheries agreements with third countries, and less than 0,1% of the total budget of DG MARE (EUR900 million annually). The agreement thus has a very weak impact on the budget allocated for fisheries within the framework of the EU.

However, with catches reaching only, on average, 34% of the reference tonnage, this suggests that the European Union has paid for some 6,600 tonnes of unutilised fishing opportunities each year, corresponding to an average annual overpayment of about EUR430,000. However, it should be considered that the Parties agreed on the relatively high reference tonnage in the Protocol to partly offset the impacts on Mozambique of the notable reduction in financial compensation following the removal of the deepwater shrimp opportunities in the previous Fisheries Agreement. It was also difficult to anticipate the negative impacts of piracy on EU vessel deployment at the time of negotiations (2006).

## 5.4 Socio-economic impacts of the Agreement

### 5.4.1 Economic impacts

Considering the financial account data presented in Annex 6, which suggests that the added-value (wages and profits) generated by the European fleet is on average 40% of the sales revenue, the value added generated by the EU fleet activities under the Agreement is estimated by the consultants to be an average of EUR 2.4 million, as shown in Table 35.

**Table 35: Estimated added value by EU fleet activities in the Mozambique zone**

	<b>Value added % of revenue</b>	<b>Sales revenue EU fleet</b>	<b>Estimated value added</b>
2007	53%	2,525,395	1,333,350
2008	37%	5,572,181	2,049,560
2009	35%	7,206,478	2,496,917
<b>2010</b>	<b>41%<sup>1</sup></b>	<b>9,165,494</b>	<b>3,795,367</b>
<b>Overall</b>	<b>40%</b>	<b>24,469,548</b>	<b>9,675,194</b>
<b>Average</b>	<b>40%</b>	<b>6,117,387</b>	<b>2,418,799</b>

<sup>1</sup> average of 2007 to 2010

Most of the direct added value is generated to the EU fleet operators and crew (some of whom are non-EU). Additional economic benefits are generated downstream by the processing of the catch by the canning facilities located primarily in Seychelles, in Madagascar, in Mauritius and Thailand.

<sup>59</sup> A request for information on non-EU licensed vessels was declined by the Mozambican authorities

There is no unloading, nor transshipment of products in Mozambique, nor regular use of port services (EU vessel operating under the Agreement rarely if ever visit Mozambique ports). There is no consistent employment of Mozambican crew onboard the vessels (although a small but unknown number may be employed on the surface longliners). Therefore there are no economic benefits derived by Mozambique from the Agreement other than those resulting from the financial contribution and royalties attached to the licences.

#### 5.4.2 Impact on employment

##### *EU employment*

Table 36 presents average manpower employed by segment and by nationality. The numbers of crews take into account of the rotation by thirds on vessels concerned (2/3 of the crew embarked at any one time and 1/3 at rest). Total employment on EU vessels using the Agreement therefore is about 1,086 linked jobs onboard (full time equivalent), of which 375 are EU nationals and 711 of ACP origin.

Considering that in the EU management and the engineering service jobs onshore account for about 15% of the personnel embarked aboard, this represents about 163 additional EU jobs, making a total of some 538 EU jobs linked to the Agreement. However, the degree of linkage to the Agreement varies considerably depending on the extent to which an individual vessel utilises the opportunities.

For the purse seiners, the annual catches in the Mozambique zone are of the order of 0.9% of the total catches of European seiners over the period 2006-2008, which suggests that the positions are only weakly linked. A total of only 7 full time equivalent posts in this fleet segment are directly attributable to the Agreement.

For the surface longline segment, the situation is rather different. The annual average catches of the EU fleet during the period 2007-2009 were in the region of 13,932 tonnes (as indicated in Table 24). Thus the annual catches of the EU vessels in the Mozambique zone represent some 8.6% of the vessels activities and the jobs on these vessels are moderately strongly linked to the Agreement. A total of 27 FTE posts are directly attributable to the Agreement.

Therefore overall, whilst the access to the Mozambique zone is not a major determinant of EU employment onboard in the purse seine segment, it can be regarded as such for the surface longliners. Even so, the fishing strategy in both segments relies on stable access to a number of zones in which a migratory resource can be exploited, of which the Mozambique zone has provided an important component.

##### *Mozambique Employment*

The protocol envisages measures to support the national employment onboard EU vessels operating under Agreement, requiring that if possible at least 8% of the crew, be of Mozambican origin, employed subject to ILO standards. However the requirement is non-binding. There is no additional compensation to be paid by the vessel operators for not recruiting national seamen.

EU vessels operating under the Agreement do not visit Mozambique. Mozambican authorities were not aware of any employment onboard of Mozambican nationals. No data was available from the EU fleet sector regarding employment of Mozambique nationals.

**Table 36: Estimated employment on board EU vessels operating under the EU-Mozambique FPA**

	Crew per vessel					Total crew				Shore (15%)	
Segment	Total	EU	ACP	Mozambique	Mean no. of vessels 2007/2010	Total	EU	ACP	Mozambique	EU	Total EU
Purse seine	24	8	16	n/a	32.25	774	258	516	n/a	116.1	374.1
Surface long liners (ES/PT/UK)	16	6	10	n/a	19.50	312	117	195	n/a	46.8	163.8
Surface longliner (FR)	6	4	2	n/a	0.00	0	0	0	0	0	0
Total					51.75	1086	375	711	n/a	162.9	537.9

n/a = no data available

Mozambique has good physical and institutional infrastructure for industrial fisheries (good ports, repair facilities, processing sector, sanitary compliance with access to the EU market). It has all of the conditions necessary for visits by foreign vessels. However whilst the main operational port/transshipment bases for the EU vessels remain in Seychelles (seiners) and Durban (surface long line) it is difficult to envisage landings from or national employment by these fleet segments. The Protocol does not provide for any discounts on licence fees for landings in Mozambique. These could be included as an incentive a future Protocol, but are unlikely to have the desired impact whilst the vessels operate from distant bases.

### 5.4.3 Impact on food security

No fishery products caught under this Agreement were discharged in Mozambique ports and the Agreement has not therefore contributed to the supplies of food to the national market. Fish species targeted under the Agreement may also be targeted by the Mozambican artisanal fisheries, whose catches of tunas and large pelagic fishes (including tunas and sharks) are estimated at 6,586 tonnes in 2007 (cf. average EU catch in the Mozambique zone of 3,380 tonnes). The Mozambique artisanal catches represent about 1.8% of the total catches by all fleets of these species in the Western Indian Ocean, and the EU catches in the Mozambique zone about 0.9%. Since the EU vessels operate more than 12 miles from the coast, there no interaction between the two types of fishing. Considering the highly migratory nature of these species, and the level and spatial differentiation of the catches made by the EU and the artisanal fisheries it is unlikely that the Agreement has impacted negatively on the availability of resource to the artisanal fleet or on the supplies of fish for the national market. It may be argued that through the Agreement's support for implementation of a sustainable fisheries policy including strengthened quality control, it has potentially indirectly contributed to the longer term supply of wholesome fishery products to the national market.

## 5.5 Impacts of the Agreement on sustainability

### 5.5.1 Impacts on target stocks

Table 37 shows the contribution of catches made under the Agreement to the overall level of exploitation of the target stocks in the Indian Ocean

**Table 37: Share of Indian Ocean catches by all fleets of EU catches in the Mozambique zone**

Species	Average Annual Catch (tonnes)			Impact of FPA on stock %
	EU catches in MOZ zone (2007-2010)	EU catches total from stock (2007 – 2009)	Total catch from stock (2007 – 2009)	
Yellowfin	938	75,559	305,883	0.31
Skipjack	1,161	100,992	441,068	0.26
Bigeye	286	19,211	110,858	0.26
Albacore	33	1,783	44,369	0.07
Swordfish	622	6,851	23,737*	2.6
Blue shark	194	5,121	7,990	2.4
Shortfin mako	61	581	1,184	5.2
Others	85	n/a	n/a	n/a
Total	3,380	210,098	935,089	0.36

\* assumes a single stock in the Indian Ocean

Source: European Commission, IOTC

The Fisheries Partnership Agreement between the EU and Mozambique makes the commitment to promote responsible fishing in Mozambican waters as provided for in FAO's Code of Conduct for



Responsible Fishing, including respect for the state of fish stocks (Art. 3). This is specified further in article 4 of the protocol to the FPA (Scientific cooperation) on the consultations to take place to ensure the management and conservation of living resources in the Indian Ocean, within international organisations if this is relevant. Considering that the IOTC is the regional fisheries management organization mandated to manage tuna resources and associated species in the Indian Ocean, this implies that the management measures adopted should be followed for the species under the mandate of the IOTC.

Overall, the Agreement appears to account for only a small proportion of total catches on the main stocks caught and landed, corresponding to 0.36% of the exploitation. However, there are important variations on impacts between species. In the following paragraphs the contribution of the Agreement to exploitation is considered in the context of the stock status and management recommendations.

### ***Bigeye tuna***

The overall level of 2009 catches have been in conformity with the scientific advice of keeping catches at or below 102,000 tonnes. The stock is considered to be in a healthy state and not subject to over-fishing, although it is considered to be fully exploited. There are concerns about the number of juvenile individuals that are taken by the purse seine fisheries on FADs which are used by the EU vessels fishing under the Agreement. However, the impacts of FPA on the bigeye stock can be considered to be minimal, accounting for about 0.3% of the total catch for this stock. Catches of this species under the Agreement are considered to be sustainable.

### ***Skipjack tuna***

There is no analytical assessment of skipjack tuna. Instead the state of the stock is inferred by using stock indicators (e.g. CPUE, sizes of fish caught, etc.) The skipjack stock is considered to be in a healthy state and not subject to overfishing. Skipjack is known to be resilient to fishing pressure (high productivity) and IOTC recommends only that the continued growth of IO catches should be monitored, and measures to control fishing pressure adopted introduced if there are signs of unsustainable fishing pressure. The FPA impact is minimal (about 0.3%) and catches of this species under the Agreement are considered to be sustainable.

### ***Yellowfin tuna***

The yellowfin tuna stock is considered to have been subject to overfishing in recent years, particularly during the period 2003-2005 where exceptionally high catches were taken. Furthermore, the available data appears to indicate that current recruitment is relatively low, making recovery more difficult for the stock despite recent decreases in fishing effort. However global IO catches in 2009 were below the scientific advice of keeping below the estimated MSY of 300,000 tonnes and current exploitation levels are considered to be sustainable. The FPA accounted for about 0.3% of the total catches for this stock. Catches of this species under the Agreement are therefore considered to be sustainable.

### ***Swordfish***

For swordfish, the overall level of exploitation in the Indian Ocean appears to be within sustainable limits, indicating that the state of the swordfish stock (assuming a single stock) is healthy and catch levels are sustainable and below the estimated MSY of 29,000 tonnes. Furthermore, fishing under the EU Mozambique FPA accounts for only a limited proportion (2.6%) of the total exploitation of this species in the Indian Ocean.

However there are indications that there may be a sub-population of swordfish in the southwest Indian Ocean, which has experienced overfishing for several years up to 2008. The IOTC Scientific Committee has recommended that catches in the SW should be maintained at levels at or below those observed in 2008 (ie.6,400 tonnes) but it should be noted that this recommendation has not been adopted as a management decision by the IOTC. This area is one of the preferred fishing grounds of the EU longline fleet (and particularly the Spanish vessels), and falls partially within the Mozambique zone. Catches of swordfish by EU surface longliners in the Mozambique zone during the Agreement are estimated to have averaged about 670 tonnes per year (2007-2010). If a separate SWIO stock is assumed, then EU vessels operating under the FPA have accounted for 10% of the

annual catch limit for this stock, as advised by the IOTC Scientific Committee. Their operations outside the Mozambique zone are estimated by the consultants to have accounted for a further 15% of the catch limit<sup>60</sup>.

It appears the total swordfish catches in the Indian Ocean have also declined, due to the general fall in numbers of longliners of all nationalities. There is no data regarding actual catches of swordfish in the SW Indian Ocean in the two years since this recommendation was made. Annual EU catches of this species in Mozambique zone have increased during the course of the Agreement, from an estimated 300 tonnes in 2007 to almost 1,100 tonnes in 2010 (17% of the recommended catch limit). Despite the fact that the fleet size has declined (as has the numbers of vessels drawing licences under the FPA), there is a risk that due to lack of data to define the stock status, EU vessels may have contributed to an unsustainable level of fishing on this stock.

### *Pelagic sharks*

In general the status of pelagic shark stocks in the Indian Ocean is uncertain. Basic catch data for these species is poor and unreliable, largely due to non-reporting and mis-reporting of catches. This is also the case specifically for blue shark and shortfin mako which may be considered as secondary targets in the EU surface longline fishery. The SC (IOTC) advice is that the Commission should introduce better mechanisms to ensure that contracting parties comply with reporting requirements on sharks, as stipulated in IOTC resolutions, including possible amendments to resolutions in force.

These two shark species are considered to be relatively more resilient to fishing pressure compared to other shark species, but despite this there are concerns about current exploitation levels. The IUCN has classified the blue shark as “Near Threatened” at global level and the shortfin mako as “vulnerable” at global level. The EU-Mozambique FPA is estimated to have an impact on these two shark species, accounting for about 2.4% and 5.2% of total catches in the Indian Ocean, respectively (assuming single stocks). These are modest impacts but there remains a risk that EU vessels have contributed towards an unsustainable exploitation of these species,

## 5.5.2 Impacts on non-target species and ecosystem

Purse seine fishing is generally considered to be a “clean” fishery with low bycatch rates and discards, and the available data tends to support this. Bycatch of marine turtles is low and these are generally released alive if possible. Purse seine bycatch of seabirds and marine mammals appears to be negligible, and the contribution of the FPA to overall EU catches is small, suggesting that there should be no specific concerns regarding the impact of these opportunities on sustainability.

However there are more concerns in relation to impacts of longline fisheries. The general paucity of data on shark fisheries and shark bycatch/discards in the Indian Ocean makes it difficult to evaluate the impact of the agreement on non-target species of sharks, especially since several different species may be caught and then discarded (with or without fins). The IOTC places emphasis on compliance regarding the provision of relevant data in order to be able to carry out the necessary analysis, and until now the level of data available from all fleets on discarding leaves much to be desired. IOTC has adopted precautionary measures where data reporting has not improved in the short-term. IOTC Res. 10/12 therefore prohibits the retention onboard of thresher sharks and the obligation to release alive, when possible<sup>61</sup>. As far as can be ascertained EU vessels comply with these requirements, along with stricter measures applied by Member States (e.g. prohibiting any processing of sharks on board UK vessels). The IOTC Regional Observer Scheme is also expected to provide improved data on shark bycatch and discards.

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<sup>60</sup> IOTC statistics do not distinguish catches by sub-area and it is not possible to accurately determine EU catches within this area but outside the Mozambique EEZ. An estimate is provided in a study of a spatial stock assessment of swordfish (IOTC-2010-WPB-05) which suggests that EU vessels account for 25% of annual catches of the SW Indian Ocean swordfish

<sup>61</sup> EU proposals to include bans on the retention of hammerhead and oceanic white-tip sharks were not carried in the latest session of the IOTC (March 2011).

In the meanwhile, the lack of bycatch and discard data makes it impossible to assess the impacts on non-target species. Most of the surface longline fishing by EU vessels within the Mozambique zone lies to the south of the latitude (25°S) below which seabird protection measures are required, and therefore EU vessels operating under this Agreement have potential to be implicated in such interactions. There are no reports of non-compliance with these requirements. Bycatch rates appear to be low, but there is a lack of data to allow an assessment of whether this can be interpreted as of low impact.

## 5.6 Impact of the support for sectoral fisheries policy

### 5.6.1 Impact of the policy support measures

A breakdown of the expenditure on sector support measures was presented by the Ministry of Fisheries to the Joint Committee meeting of September 2010. This included a breakdown of the 2010 expenditure, summarised in Table 38 below. Note that the amount of expenditure in 2010 exceeds the annual financial contribution since it includes unspent balances and interest carried forward from previous years. In 2010, approximately 65% of the expenditure addressed the installation and improvement of office accommodation for the Ministry HQ and branches.

**Table 38: Breakdown of sectoral policy expenditure 2010**

	MTS (x1000)	EUR	%
<b>Ministry of Fisheries</b>			
Fisheries control	2,328	51,973	3
Payment of balances on construction of HQ	36,557	816,030	49
Payment of balances on construction of Sofala Branch	11,500	256,708	15
Acquisition of vehicles for Ministry and Gaza Province	5,500	122,773	7
Payment of balance for installation of elevator of ADNAP	347	7,735	0
Installation of Ministry servers	3,950	88,174	5
Payment of study grants issued by the Ministry	41	924	0
Participation in International Meetings (Acordo EU)	3,827	85,428	5
<b>Fisheries Research Institute</b>		-	0
Fisheries management and research	5,337	119,133	7
<b>Fisheries School</b>		-	0
Works contracts for Fisheries School	5,323	118,831	7
<b>TOTAL</b>	<b>74,710</b>	<b>1,667,711</b>	<b>100</b>

Information was also presented to the Joint Committee which indicate where achievements have been made against the indicators established in the matrix, and it is possible to make an assessment of their impact in qualitative terms. The following progress was identified based on documents submitted at the Joint Committee in September 2010 and discussion with officials from the Ministry of Fisheries.

#### *Objective 1; Promote sustainable exploitation of fishery resources*

1. Small scale fishery statistical system has been extended (frame survey conducted and sampling scheme implemented covering all coastal provinces). New estimates of marine small scale fish production are available. The system will be extended to inland fisheries in 2012.

2. Three research cruises were conducted a) shrimp survey on Sofala Bank within the framework of SWIOFP programme b) deepwater shrimp study by the Spanish Oceanographic Institute and c) general fish research study by the F.Nansen (in collaboration with IMR).
3. The installation of the VMS system has been completed. The INMARSAT system for the domestic shrimp fleet is in place. The Argos system for coverage of international fleets is in the process of being commissioned. No reports setting out the means available and operational status were available.
4. Two rigid inflatable fast patrol craft are in place and operational and one maritime patrol with a chartered vessel was conducted (all with NORAD funds). No aerial patrols were conducted during the period. Mozambique staff also participated in two regional MCS patrols at the invitation of the IOC and SADC respectively, regarded as training missions. The delivery of the new patrol vessels to the Navy appears not to have been recognised by the Ministry of Fisheries as significantly increasing potential for fisheries MCS.
5. Mozambique has signed MoU with Seychelles on vessel monitoring, training of inspectors and sharing of information.

***Objective 2: Contribute to the fight against IUU activities***

1. The new Fisheries law is drafted (with FAO support) and currently with the National Assembly.
2. Mozambique has adopted the regional action plan for the implementation of the SADC IUU declaration, with the regional MCS centre to be hosted by the Ministry of Fisheries in Maputo (The EDF Programme ACP Fish II is supporting with a feasibility study)
3. Mozambique has nominated and trained staff for the issue of the appropriate catch certificates in line with EC Regulation 1005/2008 (2 courses in Beira, one in Angoche, one on Maputo).
4. A new sanctions regime was drafted, with FAO support, for introduction after approval of the new Fisheries Law by the National Assembly.

***Objective 3: Strengthening the institutional capacity of the sector***

1. The fisheries database system installed, along with new computer equipment and operational. Staff were trained in use of the system.
2. Participation in several international for a; SADC Fisheries meeting May 2010; FAO COFI meeting 2009 (aquaculture and port state control meetings); SWIOFC and IOTC meetings.
3. Mozambique ratified the UN Fish Stocks Agreement in December 2008
4. Mozambique has applied in 2011 to become a Cooperating Non-Contracting Party to the IOTC.

***Objective 4; Development of small scale aquaculture***

This objective was added in September 2010, and will address the construction of demonstration aquaculture units for tilapia. No activities are reported at the time of writing.

## 5.6.2 Financial monitoring of the policy support measures

In the meeting of the Joint Committee in September 2010, the parties agreed that “*budget execution performance was very satisfactory*” as evident by tables of financial data for the period 2007 to 2009 presented. For 2010 the FPA funds available (which include a balance and interest from previous years) had been 94% committed and 60% disbursed by the end of the first semester. .

However, the only detailed data available is a breakdown of departmental expenditure. None of the activities expressed in the matrix have been associated with a specific cost. No data has been presented at any stage of the Agreement which indicates expenditure using FPA funds against

specific measures which the parties Agreed would be implemented. It is thus not possible to quantify the utilisation of funds received under the FPA during the period 2007 to 2010.

The Commission has stressed that the financial expenditures should be presented by activities related to the results and objectives described in the matrix (rather than a departmental breakdown). The parties agreed in 2010 that the matrix would be reformulated with this in mind. This was undertaken by the Mozambican party, as part of an integrated single programming document for the financial year 2011 with measures supported by the state budget and all donors. This document, which includes the whole national fisheries programme, should provide a more effective basis for monitoring the implementation of the partnership element of the Agreement in any future Protocol.

It was not possible to assess in detail the quality of the financial management of the sector support budget by the Mozambican Government. The latest published version of the Public Expenditure and Financial Accountability (PEFA) Assessment for Mozambique is 2006<sup>62</sup>, covering the financial year 2004/2005, which was considered not to be relevant for the period of study. The PEFA of February 2008 and December 2009 are not published and PEFA of December 2010 was still under preparation in March 2011. No internal reports regarding the Ministry of Fisheries or its subsidiary institutions were available.

## **6 EX-POST EVALUATION OF THE CURRENT PROTOCOL**

### **6.1 Relevance**

#### **6.1.1 Relevance to the Common Fisheries Policy**

The investment of the EU in a Fisheries Partnership Agreement with Mozambique was expected to contribute to the following objectives, which are common with all other fisheries partnership agreements concluded by the EU:

- a) safeguarding employment in the regions of the EU dependent on fishing;
- b) securing the continued existence and competitiveness of the EU's fisheries sector;
- c) developing through partnership the fisheries resource management and control capacities of third countries to ensure sustainable fishing and promoting the economic development of the fisheries sector in those countries
- d) ensuring adequate supply of fishery products for the EU market.

A summary of the main impact indicators found by the ex-post evaluation of the Agreement is shown in Table 38.

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<sup>62</sup> Andrew Lawson, Paolo De Renzio And Mariam Umarji, Assessment of Public Finance Management in Mozambique 2004/05, Based On PEFA Methodology, Final Report, Current Status of PFM Systems & Processes, Overview of Reforms and Perspectives for 2006, Report To The Government Of Mozambique and to the Programme Aid Partners, March 2006.

**Table 38: Average annual values of main economic parameters of the EU –Mozambique Fisheries Partnership Agreement**

European consultants'	Variable	Units	Annual Value	Source: Commission, estimations
	No. licences available	No.	89	
	Rate of licence utilisation	%	58%	
	Catch	tonnes/year	3,380	
	Reference tonnage	tonnes/year	10,000	
	Catch as % of reference	%	34%	
	Average catch value	EUR/year	<b>6,117,387</b>	
	Av. value of catch	EUR/tonne	1,810	
	Cost advantage	EUR/tonne	266	
	Cost as % of ex vessel value	%	14.7%	
	EC benefit (value added)	EUR/year	2,418,799	
	Cost to EU fleet	EUR/year	249,002	
	Cost to EU	EUR/year	900,000	
	Total EU transfers to Mozambique	EUR/year	1,149,002	
	Cost benefit ratio		2.7	
	Av. No. of vessels drawing licences	No.	51.5	
	Av. No. of EU fishers employed	No.	375	
	Av. No. of Mozambican fishers employed	No.	0	

***Securing employment in regions dependent on fishing***

The Agreement has contributed to safeguarding some 375 jobs held by EU nationals on vessels drawing licences under the Agreement. These jobs are primarily located at the EU fleet bases in Northern Spain and Brittany. This accounts for only a small share of total EU employment in the catching sector (estimated to be about 190,000). The cost of the Agreement associated to the EU per job sustained is about EUR 2,400/annum. This cost does not however represent the full cost of the jobs sustained (which will also need to take into account the costs of financing other Agreements used by these fleet segments).

***Securing the continued existence and competitiveness of the EU's fisheries***

The EU's Fisheries Partnership Agreement with Mozambique has proved to be a useful instrument for the EU fleet, with a moderate overall rate of licence uptake (58%). The resources targeted are highly migratory and their movements are largely driven by oceanographic conditions. Fishing vessels must be able to follow the resources wherever it is present i.e. in the high seas as well as in the waters under jurisdiction of Coastal States, and therefore have an access to all key EEZs.

Mozambique is particularly important since not only does it have important fishing zones, it is relatively accessible to EU vessels operating from bases in South Africa (Durban, in the case surface longliners), and Seychelles (in the case of purse seine vessels). The Agreement has therefore provided an important contribution to the EU purse seine and surface long line fleet activities in the Western Indian Ocean. However, utility of the Agreement decline in 2010 since several Spanish and French purse seine vessels have relocated to the Eastern Tropical Atlantic, to reduce their exposure to the elevated piracy risk in Indian Ocean fisheries. Nevertheless, the Agreement has been an effective instrument to secure the regional presence of the EU fleet, and contributed towards its competitiveness (Objective b), although this is declining.

***The partnership approach***

The partnership component of this fisheries agreement has been implemented and a policy matrix is guiding the implementation of measures supported by funds from the Agreement.

However, the parties did not meet to adopt the programme of measures until almost two years after the coming into force of the Agreement. In addition, the programme adopted in 2008 was only for one year, since at the time there was no fisheries policy adopted by Mozambique. In the event the PDP II was not adopted until the second half of 2010, and full programme was not adopted until September 2010. There was no subsequent linkage of the measures to the PDP II. There appears to have been no critical evaluation of the measures proposed (applying the criteria of ex ante evaluation). Insufficient attention was paid by both parties to a rigorous approach to the sector support programme. The relevance of the measures selected could therefore not be established at the time they were designed. As a result the measures adopted by the Joint Committee in 2008 (and subsequently the addition of small scale aquaculture in 2010) appear as a series of ad hoc actions, with little coherence, and no indication of how they integrate within a wider matrix of fisheries policy measures supported by the state budget and other international donors. It is evident that the parties have not engaged in any substantive policy dialogue which has meant that the policy support measures have been insufficiently focused to provide the most relevant and cost effective interventions.

***Ensuring adequate supply of fishery products for the EU market***

Catch rates under the Agreement have been lower than expected, with overall only 34% of the reference catches taken by the EU fleet. However, this is still better than under some other Agreements (for example 16% in São Tomé e Príncipe). The average cost per tonne to the EU of the catches made was EUR 266/tonne, representing about 15.5% of the ex vessel price of the fish. According to Eurostat EU fish consumption in 2006 was nominally 10.8 million tonnes (production of 6.9 million and net imports of 3.9 million tonnes). This means that although it does contribute disproportionate supplies of some species such as swordfish and shark, the Mozambique FPA has contributed a negligible proportion of the total fish supplied to the EU. The Agreement is not therefore a particularly effective measure for ensuring supplies to the EU market (Objective d).

***Overall relevance to CFP objectives***

The reduction of the regional fishing possibilities in the Northern part of the Indian ocean, taking into account Somali piracy and of the reduced access to waters in the area of Chagos Islands, due to the introduction of the marine protected areas by the UK Government, has reinforced the interest of the EU fleet in safe and secure access to the fishing zone of the Mozambique. Although recent incidents of piracy have reduced interest in the Indian Ocean fisheries in general, the Agreement has contributed to the regional activity in the Western Indian Ocean of the EU fleet. The Agreement has allowed EU vessels to have secure and long term access to fishing opportunities which may otherwise not be available with such a degree of certainty. ***The Agreement may therefore be considered to be relevant to the Common Fisheries Policy of the European Union.***

**6.1.2 Relevance to the EU's Integrated Maritime Policy**

The EU's integrated maritime policy is mostly focused on the sustainable management of the seas associated with continental Europe. However, given that La Reunion is part of the France, and France has some important overseas territories in the region (including islands adjacent to the Mozambique zone), there are some important linkages to maritime policy. The Agreement enhances the engagement of EU interests within the Indian Ocean Region by facilitating the access of the EU vessels to fishing resources which otherwise would not be utilised by coastal states in the region. This furthers the aims of the EU maritime policy for maximum sustainable economic benefits to be derived from the maritime environment.

The EU Mozambique Fisheries Partnership Agreement is one of five such agreements in the Western Indian Ocean (others being with Seychelles, Comores Islands and Madagascar<sup>63</sup>). The strategies of the EU fishing fleets which follow the highly migratory resources of large pelagic fishes in the region require that the vessels are able to follow the migratory resource of large pelagic fishes (tunas and other species). The existence of several fisheries partnership agreements in the Indian Ocean region facilitates and supports the EU fleet strategy.

In particular, increasing piracy in the region affects all maritime economic activities (not only fishing) and its recent increase in incidence in Mozambique has catapulted security issues to the top of the maritime policy agenda in the SW Indian Ocean region. The EU naval operation ATALANTA is being conducted off the coast of Somalia and Gulf of Aden, in the framework of the Common Security and Defence Policy (CSDP) of the EU. The objective is to “deter, prevent and intervene in order to bring to an end acts of piracy and armed robbery” which may be committed in the areas where they are present. The European naval force operates in a zone comprising the south of the Red Sea, the Gulf of Aden and part of the Indian Ocean, including the Seychelles. The recent extensions of the range of piracy incidents highlights the need for effective maritime security for the implementation of the Fisheries Partnership Agreement.

### 6.1.3 Relevance to EU Development Policy

The European Union is a development partner of Mozambique, participating in national and regional indicative programmes which allocate European Development Fund resources to the partner country. Since the intervention strategies support the implementation of Mozambique’s poverty reduction strategy, which is also closely aligned to national fisheries policy (see below), the FPA has been broadly in line with the EU’s development strategy as set out in the NIP (although the NIP does not specifically address the fishery sector).

However, there is less coherence between the FPA objectives with regard to Mozambique’s participation in some regional EU funded programmes. The Commission has decided that due to the fact that funds are already earmarked in the FPA sector matrix for surveillance activities, supplementary financial assistance cannot be granted to support Mozambique’s participation in regional projects which provide assistance in MCS. This has reduced Mozambique’s incentive to participate in two important regional programmes (i.e. Regional Plan for Fisheries Surveillance in the South-West Indian Ocean under the auspices of the IOC, and the ACP Fish II Programme). The less than maximal participation of Mozambique in regional EDF-funded projects has inhibited increased regional integration, especially in relation to fisheries MCS. This issue should be addressed by the parties through a more detailed programming of interventions in this area, so as to allow Mozambique to receive the full benefits of EDF funded interventions, whilst avoiding any overlap with measures supported by the FPA.

### 6.1.4 Relevance to Mozambican Policies

The Agreement has allowed Mozambique to derive financial benefit from the resources which it does not have the capacity exploit fully, compared to alternative means of allocating these resources. The financial income generated from this resource makes a useful, although not critical contribution to Mozambique, since it provides only some 0.05% of total government budgetary expenditure. Based on a GDP of EUR 6.3 billion in 2009, the Agreement contributed an average of 0.02% of national value added.

The contribution also provides an important source of funding for the fisheries administration, with 100% of the EC’s financial contribution allocated to the budget of the Ministry of Fisheries. This amount accounted for about 4.5% the budgeted funds for fisheries (which include budget allocations in the form of donor funded projects). Mozambique depends on the FPA for approximately 60% of income it derives from the tuna fishery, so the Agreement is considered to be relevant to this country’s policy of gaining financial benefits from resources which it cannot itself exploit.

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<sup>63</sup> The FPA with Mauritius does not have a protocol in force since 2007.



However, whilst the Agreement has allowed greater financial benefits to be derived from the national resource, since there are no direct economic linkages, nor landings of fish into Mozambique, the Agreement has not contributed directly to the poverty reduction policy aims set out in the PARPAII, nor to food security, improved living conditions of artisanal fishing communities, being objectives as set out in the PDP 2010-2019. Through the sectoral support measures in supporting the building of sectoral management capacity the Agreement has contributed indirectly these objectives. It has also clearly contributed to the third objective of the PDP II "Increased contribution to national economic and social development". The Agreement can be regarded as relevant mostly in terms of the fourth of the objectives set out in the PDP II ("Increased contribution of the sector to the balance of payments within the frame of a public administration enabled to meet these ends in general and to support of the sustainable exploitation of fisheries resources and aquatic ecosystems.")

***Overall, the Agreement is therefore considered to be only partially relevant to the current policies of the Mozambique government, although it does make a moderate financial contribution to overall implementation of the national policy framework.***

## 6.2 Effectiveness

Between 2007 and 2010 the Fisheries Partnership Agreement with Mozambique has supported the deployment of an annual average of about 52 EU vessels (32 purse seiners and 19.5 surface longliners) in the Mozambique zone, with an overall rate of available licences drawn of 73% for purse seiners and 43% for surface longliners. The average annual catches under the Agreement were 3,380 tonnes valued at EUR 6.1 million with a value added generated estimated at EUR 2.4 million/year, accruing to the EU and ACP countries (in the form of profits to operators and wages of EU and ACP crew, plus some benefits to downstream processing in ACP countries in the region, and in Spain and France). The Agreement is estimated to support the employment onboard of 375 EU nationals ((but none from Mozambique). This accounts for 19% of the total EU nationals employed on EU vessels operating under Fisheries Partnership Agreements but only 0.15% of the EU employment in fisheries.

About 37% of the value of the Agreement to the EU fleet is in the form of the purse seine fishing opportunities and 63% due to the surface longline opportunities. Overall some 75% of the Agreement is derived to the Spanish fleet. France derived about 18% of the revenues, all in the form of Purse seine opportunities. About 5% of the value is derived by Portugal in terms of longline catches.

The Agreement has not been effective in attracting French surface longliners. It is important to note a significant decrease in the effectiveness of the Agreement in 2010, due to the transfer of a significant number of vessels to other regions in response to the escalating risk of piracy. However, this has been offset by an increase in catches made by the vessels which have utilised licences, so that, overall, as means of increasing production of the EU fleet the Agreement has become progressively more effective over time.

Fishing under the agreement with Mozambique represents just over 1% share of the total turnover of the EU fleets under fishing agreements, but only 0.1% of the turnover of the entire EU fishing fleet. The EU surface longline segment is rather more dependent on the EC-Mozambique FPA which accounts for an estimated 9% of the revenues of this fleet segment. This segment can be regarded as being moderately dependent on the Agreement.

***The Agreement may therefore be considered to have been an effective measure for the EU, supporting the EU fisheries objectives of deployment of EU vessels, generating employment for EU and third country nationals and generating supplies, albeit limited for the EU market.***

For Mozambique the Agreement has been an effective measure for introducing foreign fishing vessels, thus generating revenues from national resources that it has not the capacity to exploit. As a result the Government Revenue Account has been credited with a financial amount averaging EUR 1.15 million/year. Around 78% of this value is contributed by the EU and the balance from the EU fleet licence fee payments. The income generated represents about 70% of what could have been expected if all of the EU vessels had purchased private licences at the prices set by Mozambique regulations. There are no additional economic benefits from employment on board, transshipments of

vessel services. The contribution of the Agreement to the economic development of Mozambique is rather limited (accounting at most for 0.02% of GDP).

No costs were associated with the planned activities. There has been no financial monitoring of implementation at the level of each measure, and no financial reporting on progress. It is recognised that the FPA funds (even with 100% allocation of the financial contribution to the fishery sector) are rather limited (accounting for 4.5% of the fisheries budget). In relation to the overall donor support for the fishery sector, the approach adopted by the parties has not ensured that the implementation of the partnership element has been as relevant as it could have been, although the budgetary support to the Ministry of Fisheries has ensured an ongoing strengthening of its capacity. Given that at the time of the signature of the Agreement, there was no fisheries policy in place and the legal framework was also out of date, support for the adoption of the Fisheries Master Plan, and new Fisheries Law would have provided a more relevant, direct and objective policy measures appropriate to the aims of the FPA.

Therefore whilst the Agreement has been effective at providing a guaranteed regular financial income for Mozambique, it cannot be considered to have been an effective tool for helping Mozambique to meet its development policy objectives.

It is however recognised that the relatively modest dimensions of the Agreement mitigate against the commitment of significant management resources, for both parties. Any future set of measures should establish as a priority the adoption of a set of costed measures, clearly linked to the single programme document of the Ministry of Fisheries which guides fisheries policy implementation. The measures should be established taking into account the modest dimensions of the Agreement.

### 6.3 Efficiency

Overall, for the EU, the Agreement had a moderately positive cost :benefit ratio of 2.7 (annual cost to the EU budget of EUR0.9 million compared to an annual benefit of EUR 2.4 million). This means that for every EUR spent on the Agreement from the EU side, EUR 2.7 are generated. The ratio indicates that the Agreement has been a moderately efficient means of achieving the economic benefits derived, although not as efficient as it could have been. It should be noted that this estimate does not include up- and downstream impacts (for example fishing inputs and processing) and that the actual economic efficiency will be significantly higher.

The average catches taken were only 34% of those expressed in the reference quantity of 10,000 tonnes per year, which suggests that the EU has paid for about 6,600 tonnes per year of unused fishing opportunities (at a cost to the EU budget of EUR 430,000 per year). This additional expenditure delivers no economic benefits to the EU fleet or taxpayers.

However, it should also be noted that of the 205 licences drawn under the Agreement during 2007 to 2010, 58 of the vessels subsequently paid additional licence fees in respect of catches in excess of those associated with the advance payment. Additional catch fees comprised 22% of the direct payments by EU vessels to Mozambique. Payment of excess catch fees requires additional administrative resources on the part of vessel operators and administration in EU Member States, the Commission and Mozambique. The relatively frequent payments suggest that the advance licence fees may have been set at a level which was too low in relation to actual catches subsequently made.

***The Agreement can only be regarded as a moderately efficient method of achieving the policy objectives during the period covered by the evaluation.***

### 6.4 Sustainability

Because of its limited impact on overall catches of the three species of tuna targeted by the purse seine segment operating under the agreement (about 0.3% of total catches from the stocks of each), there can be no significant impacts on sustainability on target species caught. Although there is only limited data on non-target impacts and ecosystem interactions from this segment, this tends to suggest that purse seine fishing in the region has low bycatch rates and discards. As far as can be ascertained all of the purse seine fishing operations conducted under the Agreement comply with the management recommendations of IOTC and the corresponding measures implemented by EU

legislation. The impacts of the Agreement are minimal and therefore purse seine fishing opportunities appear to be sustainable and in accordance with the principles of responsible fisheries.

With regard to surface long line, the Mozambique zone is one of the preferred fishing grounds of the EU longline fleets in the region (especially Spanish vessels) targeting swordfish and some species of sharks. With regard to swordfish, about 56% of the catch of the EU surface long line vessels in the Mozambique zone comprises this species. These vessels took an estimated 2.6% of total catches of this species from the Indian Ocean. However there is a possibility that the SW Indian Ocean resource exploited under the FPA is a distinct sub-stock which has suffered from excessive levels of exploitation in recent years. The IOTC Scientific Committee has therefore recommended that catches from this sub-stock should be maintained at levels at or below those observed in 2008 (6,426 tonnes). The contribution of the FPA to the catch limit in the SW region has risen over the course of the Agreement from 5% to 17% in 2010. This increase in exploitation in this zone suggests that there is a risk that the EU surface long line fishing opportunities under this Agreement may have not been in line with the scientific recommendation for swordfish.

Catches of secondary target species of short finned mako shark and blue sharks under the FPA have accounted for an estimated 5.2% and 2.4% of respective total catches in the Indian Ocean. However there is great uncertainty about the Indian Ocean catch for these two species, as well as uncertainty regarding stock condition. Given low levels of productivity and concerns regarding shark finning practices by several long line fleets operating in the region, there are concerns that both species, and particularly mako shark, are subject to unsustainable levels of exploitation. Both species are listed as being of concern by the IUCN. There are also concerns with regard to thresher, ocean white tip and hammerhead sharks, which may be subject to a degree of discarding under the Agreement (IOTC Resolution prohibits retention on board of thresher sharks<sup>64</sup>). Given the increasing catches throughout the course of the FPA there is a risk that the Agreement has made a contribution to an unsustainable level of fishing of these species of sharks in the Indian Ocean region.

There is evidence of a degree non-declaration to the Mozambique authorities (by the surface long line segment in 2010), although there is no evidence of non-reporting to their flag states. Whilst the EU surface longline vessels do appear to comply with the formally adopted IOTC management recommendations in respect of swordfish and shark species, IOTC has not adopted some scientific advice for stronger management measures on a precautionary basis. There are also concerns regarding the wider ecosystem impacts of the surface longline fisheries contained within the Agreement, especially negative interactions of surface longlining with non-target species of sharks, and seabird and turtle populations.

Therefore, the inclusion of the surface long line elements in this Agreement raises concerns regarding the risk of unsustainable mortality on a sub-population of swordfish in the SW Indian Ocean (which includes the Mozambique zone), and of several species of shark, turtles and seabirds in the wider region Indian Ocean. Whilst these concerns can only be addressed at the level of all fleets operating in the wider region, it is not possible to state with certainty that the inclusion of these opportunities in the Agreement has been in accordance with the principle of responsible fisheries.

The Agreement, through its support for the development of policy framework for sustainable fisheries in Mozambique, was expected to have made a significant contribution to improved sustainability through improvements in fisheries management and controls. However, whilst progress in these areas has been significant in recent years, due to lack of clarity in the programming and financial management of the interventions made under the Agreement, it has not always been possible separate the impacts from those attributed to other sources of funding. The exception is in the case of fisheries research, where the IIP activities have depended on the FPA for about 51% of the budget.

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<sup>64</sup> In 2010 the EU has unsuccessfully sought to strengthen IOTC management regime for sharks (specifically by proposing prohibition of retention on board of hammerhead or oceanic white tip sharks).

The Agreement has only made a modest contribution to improved sustainability of the Mozambique fisheries through the partnership element.

Mozambique's non membership of the IOTC has not impacted on the sustainability of the Agreement since the EU is a member and fishing by EU vessels in the region is subject to the IOTC management recommendations. Although there was a risk that this could give rise to different management regimes applying to EU and other third country vessel operating within the same EEZ, this appears not have happened. Mozambique's expected election to IOTC as a Cooperating Non-Contracting Party is expected to resolve the potential for anomalies in the management regime and thus strengthen sustainability of fisheries within the Mozambique zone.

## 6.5 Lessons learnt from the ex-post evaluation

The Fisheries Partnership Agreement approach has proved to be a moderately effective instrument relevant to the policy frameworks of both EU and third country parties. On the EU side it has ensured continued access of EU vessels to a regional migratory fishery resource at reasonable costs to fleet operators.

For the partner country it has generated financial income from a fishery which its domestic fleet has no capacity to exploit, although in this case, it has not contributed to a primary fisheries policy objective, of poverty reduction in the fishery sector. The benefits of the FPA to the third country are mainly limited to financial income to the national budget. Even where the third country has good conditions for economic linkages with the EU fleet (stability, port and communication infrastructure, modern processing sector, sanitary compliance and access to markets) this provides insufficient incentive for EU vessels to tranship fish other than at their regular ports. Strengthened systems of fisheries monitoring surveillance and control (and particular satellite VMS) have proven to be an essential in ensuring proper reporting of activities within the frame of the FPAs. As vessel monitoring and enforcement capacities are developed, in order to avoid unnecessary disputes it becomes increasingly important to ensure clear agreement on permitted fishing zones, especially where the EEZ is not defined or disputed between the third country and other coastal states.

There is a need to ensure that the dimensions of the Agreement are in line with the demand for fishing opportunities, so as to maintain the FPA as an efficient instrument for the EU in financial and economic terms. The financial structure of the Agreement needs to reflect the values of the different species targeted by the beneficiary fleet segments, to ensure equitable access terms but this apply to all EU Fisheries Partnership Agreements. The partnership approach is valid, but needs to be implemented in a structured manner, with a sufficient level policy dialogue between the parties. There needs to be rigorous attention to selection of appropriate measures to be supported and embedding them within a broader fisheries policy framework, as well as adequate monitoring of financial expenditure and implementation. Where policy measures are not implemented by the third country, or where monitoring of disbursements and activities has not been in accordance with agreed procedures, the EU may need to consider suspending the payments corresponding to the measures. However such "de-linking" can only be justified where policy measures and monitoring indicators are properly formulated. The dimensions of smaller FPAs mitigates against substantial inputs of management time by the parties in ex ante evaluations and monitoring, and measures therefore need to be simplified and reduced in number (eg. adoption of a fisheries policy document, passage of a new fisheries law, accession to IOTC). Policy measures also need to focus more on integration of the third country within regional fisheries management initiatives. The European Commission also needs to ensure a higher degree of coherence between regional programmes supported by EDF and sectoral measures supported by FPAs, and to actively work to ensure the inclusion and participation of FPA third countries in regional development projects.

Constant review of the sustainability of opportunities provided under FPAs is required, especially in relation to resources and ecosystem impacts where scientific information is incomplete, as well as consideration of the case for the application of the precautionary principle.

## 7 CONCLUSIONS AND RECOMMENDATIONS

### 7.1 Conclusions

The first Protocol of the Fisheries Partnership Agreement between the EU and Mozambique has clearly benefited the mutual interests of both parties. For the EU, it has proved to be highly relevant to the Common Fisheries Policy (since it provides access to fishing opportunities for EU vessels, supporting their regional presence in the SW Indian Ocean), with associated (albeit modest) financial and economic benefits to the EU. For Mozambique it has allowed the generation of financial income from national fisheries resources which at present the country does not have the capacity to exploit.

However in the first Protocol, the Agreement has not been implemented efficiently, with on average only 58% of the available licences drawn and only 34% of the reference catch taken. As a result the EU has paid an average of EUR 430,000 for unused fishing opportunities and only modestly positive benefits, with an added value of EUR2.7 for every EUR invested. The issue of piracy has impacted severely on the utilisation of the Protocol, but it should also be noted that vessels which have continued to use the opportunities have experienced increasing catch rates in throughout the 4 years. In particular the increase in catch rates from the surface longline segment has emphasised differentials in the access fees between segments targeting different species.

Mozambique has benefited from a financial income to its state budget of EUR1.1 million/year. The FPA provided about 60% of the income generated by Mozambique from this fishery and has therefore clearly been in Mozambique's interest. Mozambique has elected to apply all of this to the fishery sector budget, thus delivering general benefits to the sector. However it derives no other economic benefits from the presence of the EU vessels. Measures within the Agreement to encourage employment of Mozambican seamen and to deploy observers have not been successful. There are no landings from the EU vessels. A programme agreed by the parties of fishery policy measures supported by the EU financial contribution has not been effectively implemented nor monitored. It was not possible to determine the additionality of these measures and their impacts cannot be readily assessed. The Fisheries Master Plan was completed in 2010 and adopted by the Ministry of Fisheries and provides a coherent framework for national fisheries development. Until now, the policy support measures adopted by the parties to the FPA have not been specifically linked to the Fisheries Master Plan. Their relevance to the new policy environment should therefore be re-established by the Joint Committee as a priority.

The Agreement has had less relevance to Mozambican fisheries policy as set out in the poverty reduction strategy and Fisheries Master Plan II, although it has contributed indirectly via the sectoral support measures which have helped to promote sustainable exploitation of resources, to strengthen the fight against IUU activities, and to strengthening institutional capacity of the sector. Furthermore, the Protocol's benefits have been constrained by the limited participation of Mozambique in regional initiatives, including some important regional EDF projects, which has not only reduced EU policy coherence (for example between fisheries and development policies), but has also resulted in missed opportunities for transnational synergies through effective design and programming of the intervention framework. As a result the parties have not fully exploited the opportunity to maintain a policy dialogue with a view to promoting responsible fishing, and this programme has not delivered meaningful outcomes as yet.

Whilst the purse seine fishing targeting tunas under the Protocol has had a negligible impact on the overall exploitation of fishery resources in the region, this cannot be said of the surface longline opportunities, which target swordfish and some species of shark. The lack of spatial data for the SW Indian Ocean makes it difficult to determine, but there is a risk that swordfish catches may have contributed to unsustainable fishing, noting the catch limit recommended by IOTC scientists and applied to a sub-population of this species in the SW Indian Ocean. However, this risk concerning swordfish appears to be decreasing, as longline fishing effort has decreased substantially in recent years, including the EU surface longline fleet. There are also concerns regarding impacts of catches of vulnerable resources of blue and mako sharks (where the Protocol has contributed an estimated 2.4 and 5.2% of Indian Ocean catches of these species respectively). There are also concerns regarding bycatch of other shark species, turtles and seabirds (surface longline fishing under the Protocol takes place south of 25°S, where at least two seabird bycatch mitigation measures are

required). Whilst there is insufficient data to determine definitively the sustainability of the surface longline opportunities within the Protocol, there is a clear need for the parties to adopt a precautionary approach and minimise any negative future impacts of this segment on sustainability, by limiting the potential for any increase of fishing effort under the Agreement.

In conclusion, although there are concerns regarding the efficiency of the Agreement and the effectiveness so far of the partnership component, it has proved overall to be a useful tool for furthering the mutual policy objectives of the parties. However, it is also clear that the Agreement has performed below expectation in several important respects particularly in terms of delivering value for money for the EU budget. There are also concerns regarding the risks that some of the fishing opportunities included may be contributing, along with other international fleets, to unsustainable fishing in the Indian Ocean. Where feasible, a future protocol should therefore be amended to address the concerns raised.

## **7.2 Recommendations**

The parties are advised that it is in their mutual interest to enter into negotiations for the conclusion of a new protocol under Fisheries Partnership Agreement. The negotiations should proceed in the short term to ensure continuity of access for the EU vessels which depend on the access to the Mozambique zone for their routine fisheries operations.

The negotiation of a new Protocol should take into account the findings of this study, and in particular should seek to maximise the financial, economic and social benefits delivered by the Agreement to the parties, whilst at the same time ensuring sustainable exploitation of fisheries resources, value for money for the EU budget, and effective implementation of the partnership element of the Agreement. In particular:

### **7.2.1 Duration**

The volatile conditions of fishing in the Indian Ocean suggest the need for a fairly short duration, to provide potential to adapt Protocols to new conditions as they emerge. However, to ensure a degree of stability and certainty of access for vessels a duration of at least four years is desirable.

### **7.2.2 Financial aspects**

Given the frequency of excess catch payments, the parties may also consider increasing the level of catches referenced in the advance licence fees, to a level which delivers similar net benefits to Mozambique, but avoids the administrative burden. This implies an advance of approximately twice current levels.

The parties may also wish to consider an adjustment of the unit costs of access to reflect the higher value of the catches made under the surface longline opportunities, since the market prices of the fish caught by this segment has been on average 3 times higher than for purse seine vessels. An increase in the licence fee rates would ensure more equitable access conditions between different EU fleet segments. A doubling of the nominal fee for surface longline catches (to EUR 200/tonne, shared 65/35 between the EU and fleet operators) would partially compensate for the financial impact on Mozambique of the reduction in the dimensions of the Protocol. Such changes would also go some way to addressing concerns of the Mozambique authorities regarding a disparity between the access costs in the Agreement, and those applicable to private licences for foreign operators. However, this is an horizontal issue for all current EU fishing agreement considering fishing possibilities for tuna..

In all cases, modest discounts could be maintained for smaller surface longline vessels. The parties could also consider introducing a discount on licence fees for fish landed or transhipped in Mozambique, as an additional incentive with potential to improve the economic benefits derived by the partner country.

### **7.2.3 Catch reporting and validation**

The system and procedures for transmission of catch reports should be more clearly specified in a new Protocol, in order to reduce the likelihood of non-compliances and to ensure that where catch reports are not delivered as required, any legal proceedings are launched on a sound evidential basis

regarding liability. Safeguards in the form of cross checks could be introduced to avoid bottlenecks and to identify errors and non-compliances at an early stage.

The Protocol should adopt the new catch reporting forms introduced by IOTC in 2010 (in resolution 10/03). The Protocol should make provision for catch reports to be transmitted in electronic format should this be required in future.

The formal participation of Mozambique in the process of validation of the catch declarations should be retained, and expressed in the official version of any new Protocol. However, this participation should be conditional on obtaining agreement on the procedures to be followed, which requires the collaboration of EU Member States and their scientific institutions. It is recommended that the parties seek the commitment of Member State and Mozambique scientific institutes to participate in at least one Scientific Committee meeting each year, at which the calculations applied in the validation of catch declarations will be presented for discussion, prior to their finalisation by the Member States.

#### 7.2.4 Embarkation of Mozambique seamen

The employment of Mozambique nationals has been non-binding and is recommended to remain so, since to do otherwise would add costs by requiring vessels to visit Mozambican ports. However, where a minimum crew is not recruited, the vessels could be required to pay a supplement to be directed towards training in the fishery sector. The requirement in terms of employment of ACP nationals should be retained, along with the requirement regarding ILO conditions in order to protect any Mozambique nationals in the event that they are employed.

#### 7.2.5 Observers

The Protocol should consider the eventuality that Mozambique may, during the period, be in a position to mobilise observers on board EU vessels, and that these observers could be drawn from a multinational corps of observers endorsed by all participating coastal states, to be established under regional organisation. This will require the Protocol to consider in more detail the provision of facilities and arrangements for embarkation and disembarkation, and for payment of observer fees. A derogation maybe required for smaller longline vessels which may not be able to accommodate full time observers.

#### 7.2.6 Port inspections of vessels

The power to require a port visit could be considered where this is feasible (for example in relation to the surface longline segment which fishes in the southern part of the Mozambique zone). The procedures to be followed should be considered within the terms of a new Protocol. However, the requirement would also need to be applied within the context of a wider extension of the control system. For example where observers are carried on board it may not be necessary to require vessels to visit a Mozambique port for inspection prior to fishing. Mozambican authorities could equally consider establishing improved linkages and data sharing with port states within the region as a means of strengthening controls over vessels using the Mozambique zone (gear, catch composition, compliance with finning regulations etc).

#### 7.2.7 Partnership approach

The parties, though the medium of the Joint Committee, are recommended to adopt a more rigorous approach to the identification of policy measures to be implemented under the partnership approach. This will require a more frequent dialogue, especially in the initial stages of a new Protocol, to identify suitable measures, which should be linked to the PDPII. The measures selected must be additional (i.e. not addressed by other interventions, whether national budget or other donors).

The Fisheries Master Plan II has created the basis for a single programming document which sets out fully costed annual investment activities to be funded through the single treasury account and implemented by Government. Therefore the costing of the Fisheries Master Plan should be a priority task for the Mozambican authorities. Future activities to be implemented under the FPA should be agreed and addressed within this document. The measures should have specific costs and indicators of achievement specified, and the Mozambican authorities are recommended to ensure that adequate resources are applied to monitoring of financial disbursements and achievement indicators. The design and implementation of the fisheries sector support measures should be in line with the MoU for

programme Aid (Direct Budget Support) adopted by the Programme Aid Partners in Mozambique and updated in 2009. The Joint Committee should meet at least annually to review progress, and payment of subsequent partnership elements should be conditional on the approval of the Joint Committee of annual progress reports.

It is suggested that the parties may wish to support measures linked to increased regional integration of Mozambique's management regime, and specifically participation in IOTC activities and establishment of an observer corps in line with IOTC commitments, both of which are considered to be relevant and coherent with the mutual policy objectives of both parties. An alternative would be the adoption of management plans for some of the key national stocks, although this would have less direct relevance to the EU.

There is a continuing favourable context for budgetary support to the fishery administration in Mozambique, especially given that the proposed Norwegian/Icelandic intervention will be implemented by this method. The protocol should require that the programme of measures is implemented in line with the MoU for Programme Aid /Direct Budget Support) for Mozambique setting out the procedures and commitments of for public expenditure management, to which the EU and the Mozambique Government are signatories.

### 7.2.8 Participation of Mozambique in EDF regional projects

Until now Mozambique has not been able to participate as a direct beneficiary in two important EU funded regional programmes directed at the fisheries sector (ACP Fish II, and the Regional "Regional Plan for Fisheries Surveillance in the South-West Indian Ocean). Both are highly relevant to the needs of Mozambique. In future, to ensure improved coherence between EU fisheries and development policies, the Commission is recommended to modify the approaches applied within these projects to ensure the full participation of Mozambique. Overlaps with any FPA activities can and should be avoided by the adoption of a single programming document in which measures under national and regional donor funded projects, FPA and state budget are all programmed.

### 7.2.9 IOTC and Management measures

Mozambique's application for Cooperating non Contracting Party status at the IOTC should continue to be fully supported by the EU, which will guarantee that IOTC is the future source of management advice for migratory species in the Mozambique zone. Mozambique's membership of the IOTC will not prevent Mozambique from continuing to apply current national management measures on highly migratory species which are stricter than those of IOTC (no shark-finning, no discarding and 10% bycatch)..



## ANNEXES

### Annex 1: List of persons met & contacted

Name and Title	Contacts
Ms.Silvia Severi, Desk Officer	Unit B3, Bilateral agreements and Fisheries contro in International Waters, DG MARE European Commission
Mr.Mirko Marcolin, Desk Officer	Unit B3, Bilateral agreements and Fisheries contro in International Waters DG MARE, European Commission
Mr.Yann Davalo, Desk Officer	Unit B2, B/2 - Integrated Fisheries Data Management, DG MARE
Sr. Herminio Tembe, Director	Nacional de Economia e Politicas Pesqueiras (DNEP), Ministry of Fisheries, Maputo
Dr. Manuel Castiano, Director adjunto da	Administração Nacional das Pescas (ADNAP), Ministry of Fisheries, Maputo
Dra.Paola Santana Afonso, Director,	Instituto de Investigação Pesqueira (IIP), Maputo
Dra. Nilza Dias, Investigadora,	Instituto de Investigação Pesqueira (IIP), Maputo
Dra. Lizette Palha de Sousa, Investigadora, Pesca Industrial Camarão (IIP)	Instituto de Investigação Pesqueira (IIP), Maputo
Dra. Barbara Palha de Sousa, Investigadora Pesca Atum	Instituto de Investigação Pesqueira (IIP), Maputo
Sr. Joaquim Russo de Sá, Assessor do Ministro	Ministry of Fisheries, Maputo
Sra Angelica Dengo, Chefe do Depto de Cooperaçao	Ministry of Fisheries, Maputo
Sr.Paulo Sharif, Director,	Departamento de Administração de Portos, Instituto Nacional de Administração Marítima, Maputo
Sr.Cândido Roberto Manchique	Director dos Transportes e Segurança Marítima, Instituto Nacional de Administração Marítima, Maputo
António Crespo, Head Food Security and Rural Development	European Union Delegation, Maputo
Sra. Imelda Sousa, Fisheries Sector Specialist	European Union Delegation, Maputo
Leone Tarabusi, Regional Manager for Southern Africa	EU ACP Fish II, Coordination Unit
Clarisse Barbosa Fernandes, Program Official,	Embassy of Norway, Maputo

Jean Luc Lejeune, Fisheries Consultant	Evaluation Specialist, Mid term review of EDF IOC Regional Fisheries Surveillance Programme.
Mario Lopes dos Santos, Head of Programmes Operational Coordination	Community Fisheries Control Agency

## Annex 2: International Trade in Fishery Products

Table 1: Imports of fish and fishery products from Mozambique

HS Code		2007		2008		2009	
		kg	EUR	kg	EUR	kg	EUR
301	Live fish.	6	33	1,544	2,848	86	520
302	Fish, fresh or chilled, excluding fish fillets	71,196	96,720	-	117,476	229,096	344,482
303	Fish, frozen, excluding fish fillets	13,792,064	17,822,893	20,132,853	23,957,795	20,514,642	26,004,702
304	Fish fillets and other fish meat (whether or not minced)	20,255	51,424	32,742	69,849	22,365	55,841
305	Fish, dried, salted or in brine	3,642	47,092	7,268	86,543	12,176	154,438
306	Crustaceans, whether in shell or not	33,540	158,370	2,201	15,372	2,011	10,482
307	Molluscs, whether in shell or not	17,168	55,748	49,434	125,349	17,052	52,172
1604	Prepared or preserved fish; caviar	513,157	953,880	852,730	1,459,645	665,128	1,718,047
1605	Prepared crustaceans, molluscs and other aquatic invertebrates	6,390	22,608	5,420	17,350	2,675	9,721
	TOTAL	14,457,418	19,208,769	21,084,191	25,852,228	21,465,231	28,350,407

Source: UN Comtrade, 2011

Table 2: Exports of fish and fishery products from Mozambique

HS Code		2007		2008		2009	
		kg	EUR	kg	kg	EUR	kg
301	Live fish.	12	2,815	6	1,226	-	-
302	Fish, fresh or chilled, excluding fish fillets	376,399	1,435,735	583,558	2,538,003	199,455	924,057
303	Fish, frozen, excluding fish fillets	72,579	85,658	246,198	330,091	326,631	537,114
304	Fish fillets and other fish meat (whether or not minced)	-	-	10,799	20,994	287	698
305	Fish, dried, salted or in brine	295,999	1,336,517	370,270	1,539,558	490,694	1,985,654
306	Crustaceans, whether in shell or not	10,033,764	48,207,953	10,040,209	46,310,746	8,508,333	43,310,283
307	Molluscs, whether in shell or not	36,980	275,773	44,472	305,395	76,034	255,242
1604	Prepared or preserved fish; caviar	13	21	37	78	13	30
1605	Prepared crustaceans, molluscs and other aquatic invertebrates	-	-	-	-	13,244	73,866
	TOTAL	10,815,746	51,344,472	11,295,548	51,046,091	9,614,691	47,086,943

Source: UN Comtrade, 2011

Table 3: Exports of shrimp from Mozambique by destination

	2007		2008		2009	
Partner	Kg	EUR	kg	EUR	kg	EUR
France	172,632	812,505	103,974	477,043	615,909	3,036,223
Japan	178,497	842,160	386,948	1,835,603	38,390	183,398
Portugal	2,591,678	12,178,397	2,539,840	11,319,898	2,070,101	10,150,571
S.Africa	901,861	5,160,131	765,805	4,117,269	1,290,096	8,181,597
Spain	4,939,047	23,202,060	5,636,184	25,761,093	3,860,577	18,568,187
USA	18,959	89,065	4,699	32,291	312	1,515
Others	1,231,090	5,923,635	602,759	2,767,550	632,948	3,188,792
World	10,033,764	48,207,953	10,040,209	46,310,746	8,508,333	43,310,283

Source: UN Comtrade, 2011

Table 4: Mozambique imports of frozen fish and fish fillets by origin

	2007		2008		2009	
Origin	kg	EUR	kg	EUR	kg	EUR
China	196,971	254,907	729,847	972,411	758,278	1,133,542
Namibia	8,246,901	10,671,414	7,270,374	9,686,671	5,650,448	8,446,790
Portugal	40,804	55,868	2,257	187,683	11	52,646
S.Africa	2,815,165	3,645,896	30,485	6,755,739	8,369,057	12,518,774
Spain	374,417	477,151	414,248	550,027	177,083	264,129
Others	2,138,061	2,769,081	-	5,875,113	-	3,644,663
World	13,812,319	17,874,318	N/A	24,027,644	N/A	26,060,544

Source UN Comtrade

### Annex 3: Spatial distribution of Asian Longline Catches

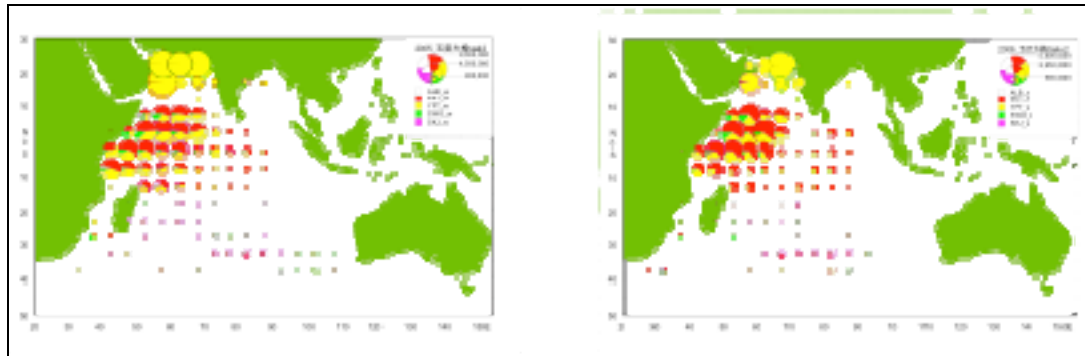
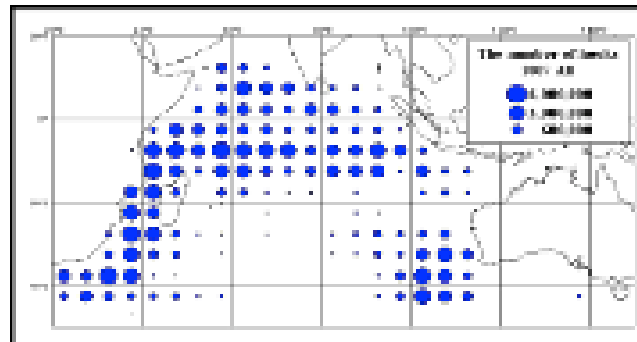
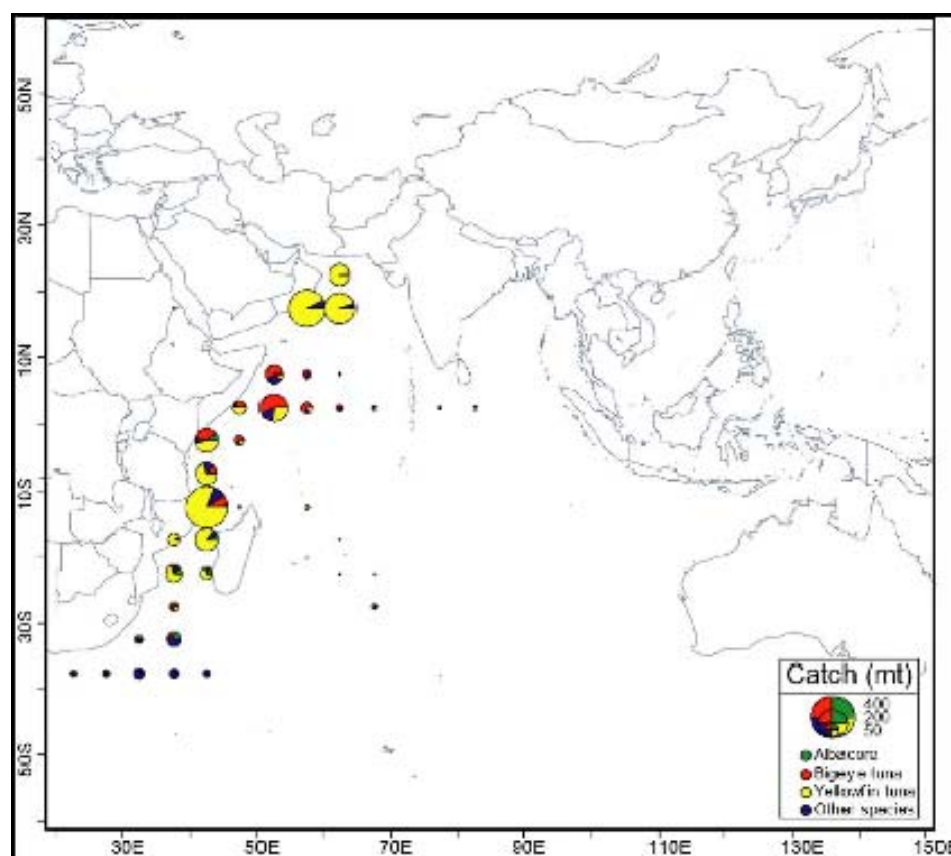


Figure 1: Spatial distribution of Taiwanese longline catches 2005 et 2006.



Source : Japan National Report, 2008. NFIFS. IOTC-2008-SC-INF19.

Figure 2: Spatial distribution of Japanese longline fishing effort in the Indian Ocean in 2006



Source : Korea National Report of Korea, 2008. IOTC-2009-SC-INF14

Figure 3: Spatial distribution of Korean longline catches in 2007

Table 1: New logbook reporting format adopted by the IOTC for purse seiners and baitboats in particular (Resolution 10/09)

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## Annex 5: Fishing licence fees paid by EU vessels to Mozambique

Table 2: Fishing licence income (including fees for additional catches) received by Mozambique under the FPA.

Year	Country	Fleet segment	No. of vessels licensed	No. of vessels declaring catches	No. of vessels with excess catches	Total Catch	Catch limit per vessel	Excess (tonnes)	Fee/excess tonne	Payment for excess catch	Cost of Licence	Payment for licences	Total Payment
2010	Spain	Purse Seine	14	12	6	1,807.00	120	799.00	35	27,965.00	4,200	58,800	86,765.00
	France	Purse Seine	8	8	2	1,055.00	120	459.00	35	16,065.00	4,200	33,600	49,665.00
	Spain	SLL more than 250 GT	7	6	1	683.55	100	262.86	35	9,200.03	3,500	24,500	33,700.03
	Great Britain	SLL more than 250 GT	1				100		35	0.00	3,500	3,500	3,500.00
	Portugal	SLL more than 250 GT	3	2	1	213.74	100	93.59	35	3,275.65	3,500	10,500	13,775.65
	Spain	SLL less than 250 GT	3	3	2	1,061.12	48	959.77	35	33,591.85	1,680	5,040	38,631.85
	<b>Total</b>		<b>36</b>	<b>31</b>	<b>12</b>	<b>4,820.41</b>		<b>2,574.22</b>		<b>90,097.52</b>		<b>135,940</b>	<b>226,037.53</b>
2009	France	Purse seine	14	8	1	449.52	120	40.37	35	1,412.95	4,200	58,800	60,212.95
	Spain	Purse seine	16	10	8	1,842.69	120	735.88	35	25,755.80	4,200	67,200	92,955.80
	Italy	Purse seine	1	0	0	0.00	120	0.00	35	0.00	4,200	4,200	4,200.00
	Spain	SLL more than 250 GT	7	5	3	723.73	100	279.54	35	9,783.90	3,500	24,500	34,283.90
	Portugal	SLL more than 250 GT	2	1	1	179.80	100	79.84	35	2,794.26	3,500	7,000	9,794.26
	Spain	SLL less than 250 GT	3	3	3	616.97	48	506.09	35	17,713.01	1,680	5,040	22,753.01
	<b>Total</b>		<b>43</b>	<b>27</b>	<b>16</b>	<b>3,812.71</b>		<b>1,641.71</b>		<b>57,459.92</b>		<b>166,740</b>	<b>224,199.92</b>
2008	Spain	Purse seine	19	8	1	422.07	120	93.00	35	3,255.00	4,200	79,800	83,055.00
	France	Purse seine	15	13	7	2,021.27	120	821.82	35	28,763.70	4,200	63,000	91,763.70
	Italy	Purse Seine	1	1	1	284.00	120	164.00	35	5,740.00	4,200	4,200	9,940.00

Year	Country	Fleet segment	No. of vessels licensed	No. of vessels declaring catches	No. of vessels with excess catches	Total Catch	Catch limit per vessel	Excess (tonnes)	Fee/excess tonne	Payment for excess catch	Cost of Licence	Payment for licences	Total Payment
	Spain	SLL more than 250 GT	15	6	2	443.73	100	56.63	35	1,982.05	3,500	52,500	54,482.05
	Great Britain	SLL more than 250 GT	1	0	0	0.00	100		35		3,500	3,500	3,500.00
	Portugal	SLL more than 250 GT	3	0	0	0.00	100		35		3,500	10,500	10,500.00
	Spain	SLL less than 250 GT	4	4	3	348.38	48	166.57	35	5,829.95	1,680	6,720	12,549.95
	<b>Total</b>		<b>58</b>	<b>32</b>	<b>14</b>	<b>3,519.45</b>		<b>1,302.02</b>		<b>45,570.70</b>		<b>220,220</b>	<b>265,790.70</b>
2007	Spain	Purse seine	21	6	1	319.20	120	25.05	35	876.75	4,200	88,200	89,076.75
	France	Purse seine	17	9	1	522.04	120	82.17	35	2,875.95	4,200	71,400	74,275.95
	Italy	Purse Seine	1	0	0	0.00	120		35		4,200	4,200	4,200.00
	Spain	SLL more than 250 GT	20	10	10	239.66	100	238.66	35	8,353.03	3,500	70,000	78,353.03
	Portugal	SLL more than 250 GT	5	0	0	0.00	100		35		3,500	17,500	17,500.00
	Spain	SLL less than 250 GT	4	4	4	281.78	48	281.59	35	9,855.62	1,680	6,720	16,575.62
	<b>Total</b>		<b>68</b>	<b>29</b>	<b>16</b>	<b>1,362.68</b>		<b>345.88</b>		<b>21,961.35</b>		<b>258,020</b>	<b>279,981.35</b>
<b>TOTAL</b>			205	119	58	13,515.25		5,863.83		215,089.49		780,920	996,009.49

## Annex 6: Cost structure for EU purse seiners

**Table 1: Compte d'exploitation-type d'un senneur dans l'océan indien sur la période 2005-2009**

	2005		2006		2007		2008		2009	
	EURO	%	EURO	%	EURO	%	EURO	%	EURO	%
CHIFFRE D'AFFAIRES	6,622,320		7,156,680		5,899,140		6,900,640		4,948,731	
FRAIS VARIABLES										
Salaires										
- Sal/tonnages pêchés UE	728,455	11.00	787,235	11.00	648,905	11.00	759,070	11.00	544,360	11.00
Autres frais proportionnels										
- Assurance poisson	19,867	0.30	21,470	0.30	17,697	0.30	20,702	0.30	14,846	0.30
- Manutention	46,356	0.70	50,097	0.70	41,294	0.70	48,304	0.70	34,641	0.70
- Cotisation professionnelles	33,112	0.50	35,783	0.50	29,496	0.50	34,503	0.50	24,744	0.50
Autres taxes parafiscales	39,734	0.60	42,940	0.60	35,395	0.60	41,404	0.60	29,692	0.60
Fret maritime	331,116	5.00	357,834	5.00	294,957	5.00	345,032	5.00	247,437	5.00
TOTAL FRAIS PROPORTIONNELS	1,198,640	18.10	937,525	13.10	772,787	13.10	903,984	13.10	648,284	13.10
FRAIS FIXES										
Salaires et apparentés										
- Prime débarquement	21,243	0.32	21,243	0.30	21,243	0.36	21,243	0.31	21,243	0.43
- Sal/fixes des marins UE	201,600	3.04	205,632	2.87	209,745	3.56	213,940	3.10	218,218	4.41
- charges sociales	128,278	1.94	130,844	1.83	133,461	2.26	136,130	1.97	138,852	2.81
- Salaires ACP	139,920	2.11	142,718	1.99	145,573	2.47	148,484	2.15	151,454	3.06
- Assurance équipage	27,142	0.41	27,685	0.39	28,239	0.48	56,477	0.82	56,477	1.14
- Vivres	122,640	1.85	125,093	1.75	127,595	2.16	130,147	1.89	132,750	2.68
- Taxes formation, comité entreprises etc	24,000	0.36	24,480	0.34	24,970	0.42	25,469	0.37	25,978	0.52

	2005		2006		2007		2008		2009	
	EURO	%	EURO	%	EURO	%	EURO	%	EURO	%
- Autres	5,000	0.08	5,100	0.07	5,202	0.09	5,306	0.08	5,412	0.11
Consommables										
- Eau	4,000	0.06	4,000	0.06	4,000	0.07	4,000	0.06	4,000	0.08
- Lubrifiants	141,914	2.14	141,914	1.98	170,296	2.89	141,914	2.06	283,827	5.74
- NH3	1,750	0.03	1,750	0.02	1,750	0.03	1,750	0.03	1,750	0.04
- Sel	50,178	0.76	50,178	0.70	50,178	0.85	50,178	0.73	50,178	1.01
- Divers consommables	5,500	0.08	5,500	0.08	5,500	0.09	5,500	0.08	5,500	0.11
- Consommation carburant	1,419,136	21.43	1,702,963	23.80	1,419,136	24.06	2,838,272	41.13	1,702,963	34.41
Prestations extérieures										
- Assurance maritime	150,000	2.27	150,000	2.10	150,000	2.54	300,000	4.35	300,000	6.06
- Consignation	12,000	0.18	12,000	0.17	12,000	0.20	12,000	0.17	12,000	0.24
- Transport équipage	80,000	1.21	80,000	1.12	80,000	1.36	80,000	1.16	80,000	1.62
- Frais observateur scientifique DCR	800	0.01	800	0.01	800	0.01	800	0.01	800	0.02
- Frais sécurité piraterie	0	0.00	0	0.00	0	0.00	0	0.00	50,000	1.01
- Téléphone, Radio, INMARSAT, Argos	288,000	4.35	288,000	4.02	288,000	4.88	288,000	4.17	288,000	5.82
- Autres prestations extérieures	20,000	0.30	20,000	0.28	20,000	0.34	20,000	0.29	20,000	0.40
Impôts et taxes UE										
- Taxe sur les salaires	70,000	1.06	70,000	0.98	70,000	1.19	70,000	1.01	70,000	1.41
- Autres impôts et taxes	1,000	0.02	1,000	0.01	1,000	0.02	1,000	0.01	1,000	0.02
Impôts et taxes ACP										
- Taxe de port	10,000	0.15	10,000	0.14	10,000	0.17	10,000	0.14	10,000	0.20
- Licence de pêche										
Seychelles	43,952	0.66	43,294	0.60	34,301	0.58	61,000	0.88	61,000	1.23

	2005		2006		2007		2008		2009	
	EURO	%	EURO	%	EURO	%	EURO	%	EURO	%
Tanzanie	12,000	0.18	12,000	0.17	12,000	0.20	12,000	0.17	12,000	0.24
Kenya	16,000	0.24	16,000	0.22	16,000	0.27	16,000	0.23	16,000	0.32
Maurice	4,000	0.06	4,000	0.06	4,000	0.07	4,000	0.06	4,000	0.08
Madagascar	3,920	0.06	3,920	0.05	3,920	0.07	3,920	0.06	3,920	0.08
Mozambique	4,200	0.06	4,200	0.06	4,200	0.07	4,200	0.06	4,200	0.08
Comores	3,375	0.05	3,375	0.05	3,375	0.06	3,375	0.05	4,602	0.09
- Compensation observateur Seychelles	3,000	0.05	3,000	0.04	3,000	0.05	3,000	0.04	3,000	0.06
- Compensation observateur Comores	200	0.00	200	0.00	200	0.00	200	0.00	200	0.00
- Compensation observateur Mozambique	200	0.00	200	0.00	200	0.00	200	0.00	200	0.00
- Compensation observateur Madagascar	1,000	0.02	1,000	0.01	1,000	0.02	1,000	0.01	1,000	0.02
Entretiens/réparations										
Entretien courant	850,000	12.84	867,000	12.11	884,340	14.99	902,027	13.07	920,067	18.59
Bateau assistance/Supply										
- Quote-part prestation bateau assistance	250,000	3.78	250,000	3.49	250,000	4.24	250,000	3.62	250,000	5.05
TOTAL FRAIS FIXES	4,115,948	62.15	4,429,088	61.89	4,195,222	71.12	5,821,531	84.36	4 910 593	99.23
EXCEDENT BRUT D'EXPLOITATION	1,307,732	19.75	1,790,066	25.01	931,130	15.78	175,125	2.54	-610 145	-12.33